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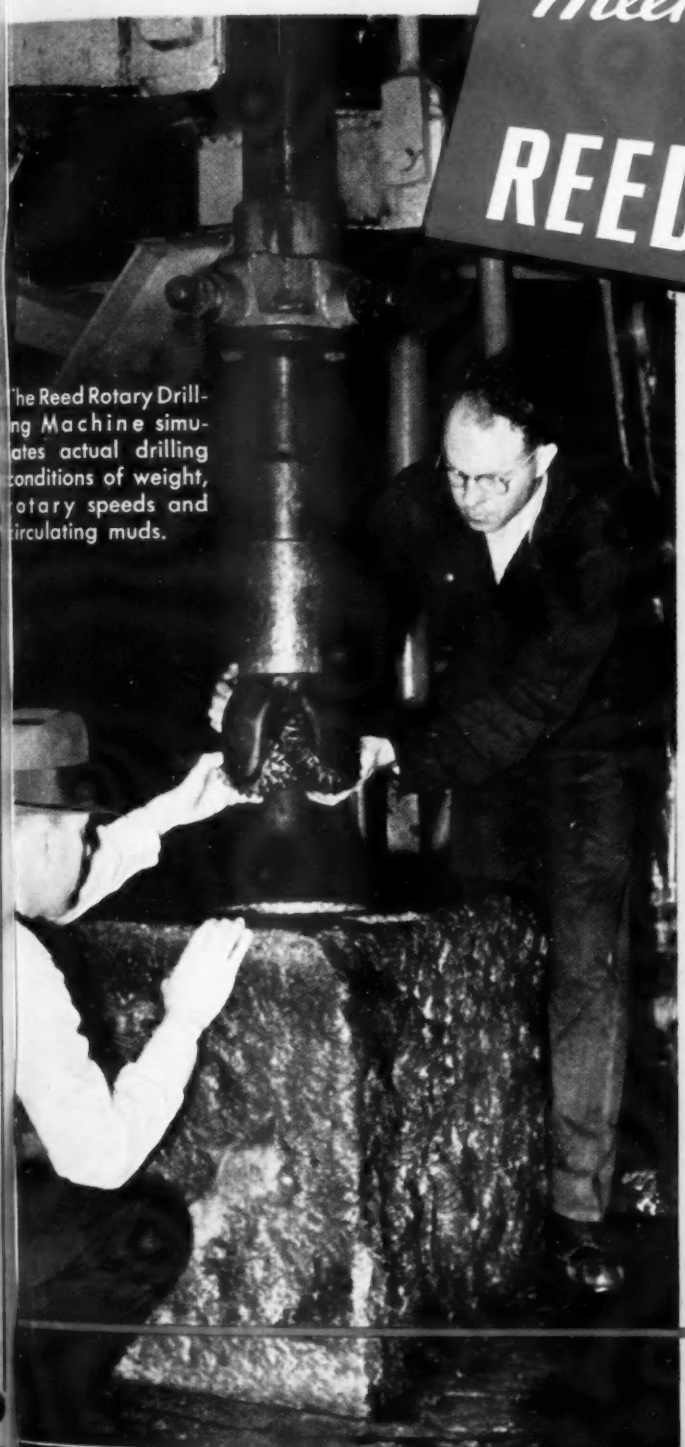

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LOOKING AHEAD
... with the Editor

ALTHOUGH neither oil nor gas has been found in commercial quantities in Arizona, structures favorable for the accumulation of these minerals are known to exist. Numerous oil seeps have been found and it is believed that sedimentary deposits of the Cretaceous and Pennsylvanian periods offer good production possibilities of between 800 and 1200 feet in the shallower formations, with deeper deposits likely to produce at between 3000 and 6000 feet.

Work of classifying favorable and unfavorable areas in Arizona was undertaken in 1938 when the State Land Board authorized a geological survey which was completed.

Seepages of petroleum occurring in many water wells in the Salt River Valley area of Maricopa and Pinal counties are considered highly important as evidence of potential petroleum reservoirs.

A brief history of these seepages, with a discussion of the geology and structural features of the area has been prepared by P. H. Lund, petroleum geologist, under the title of "Oil and Gas Possibilities in Arizona," which will appear in an early issue.

He correlates the information hitherto compiled and includes some conclusions pertinent to future prospects of the area. Logs from two wells are also given.

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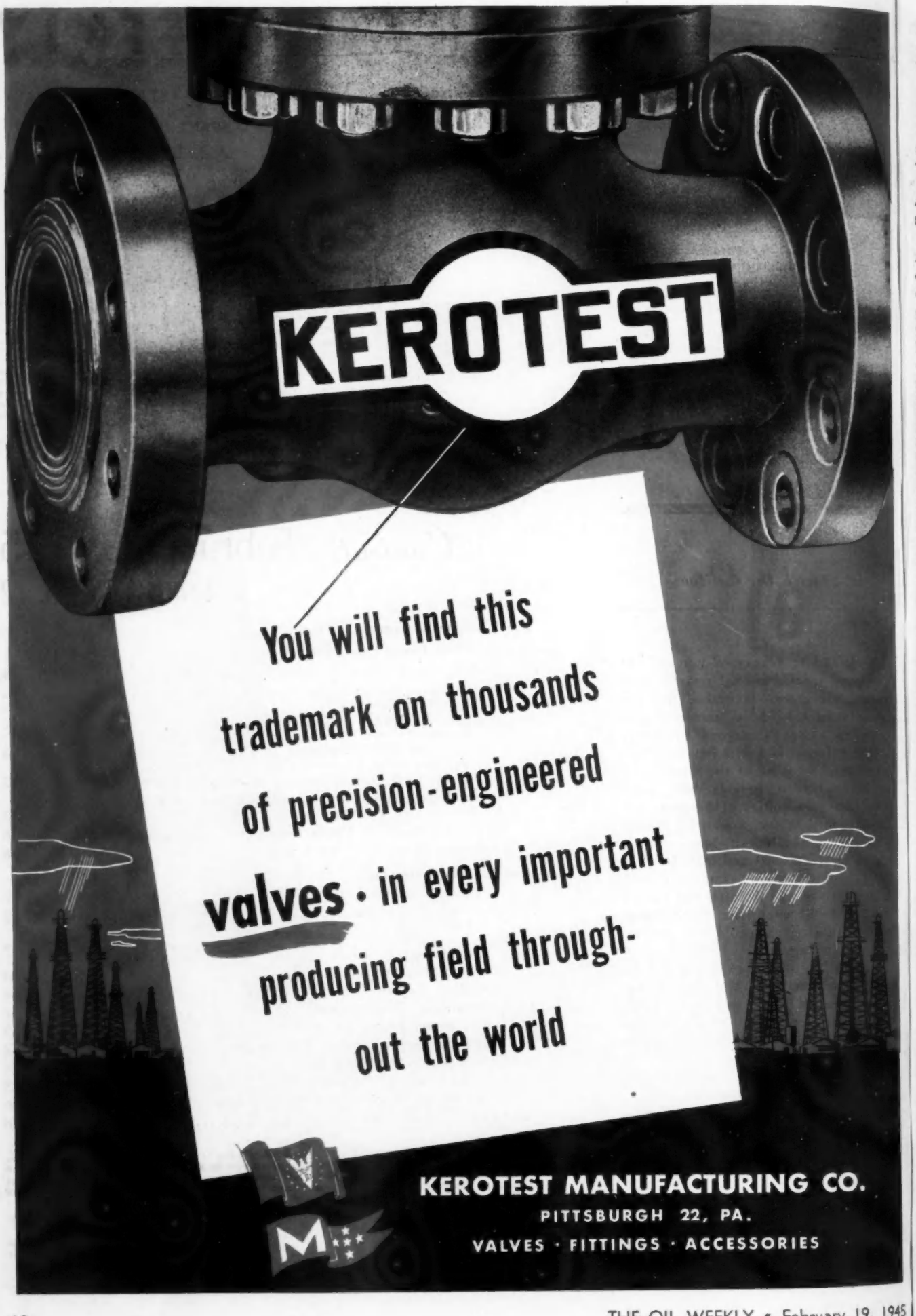
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The Changing Panorama

Safety Practices And Insurance Costs

THE Texas Mid-Continent Oil & Gas Association has sent out information to oil companies on the new workmen's compensation insurance rates promulgated by the Texas State Insurance Commission. The rates were issued following recommendations made to the commission by the national council representing insurance companies operating in Texas.

The association notes in its letter directed to Texas oilmen that "It should be kept in mind by all employers that the reduction of rates is not due to decrease in accident experience, but are based on the increase in employment and payrolls. Some of the classifications have shown increases in accident experience, and unless our safety practices are carefully observed, some rates may be forced upwards."

A brief has been filed with the board of insurance examiners by a number of trade organizations, among them Texas Mid-Continent Oil & Gas Association, asking for a revision in rate-making methods, and further conferences with the Insurance Commission are expected. Any company interested in what is being done should write the Texas Mid-Continent Oil & Gas Association, 907 Continental Building, Dallas 1, Texas, for information.

Highway Toll

A RECENT survey by R. L. Polk & Company reveals that a total of 3,651,300 passenger cars have disappeared from United States highways since Pearl Harbor.

As of July, 1944, 24,048,711 passenger cars were in operation. In 1941, just before the Jap sneak attack, the total stood at 27,700,011, or 13.18 percent more cars.

Since that time, four states have increased their registrations: Arkansas, 11.7 percent; California, 1.06 percent; Oregon, .89 percent; and Utah, 1.88 percent.

The District of Columbia has 37.58 percent fewer cars in operation now. Pennsylvania's registrations have decreased 20.53 percent and Michigan, 15.17 percent.

Jobs do not just happen. They do not result from wishful thinking. . . . Political promises do not create jobs. And never will. Jobs flow from a combination of capital, management and opportunity. And from nothing else. . . . Business cannot plan ahead with confidence if it is to be hamstrung by a political leadership which, although it may pay lip service to the cause of free enterprise, believes in something different and acts to prevent the system from effectively working.

—ALFRED P. SLOAN, Chairman
General Motors Corporation.

Haynesville Project Shows How to Do It

ANOTHER example of the feasibility of gathering and re-injecting flare gas is the new system being completed in the Haynesville field in northern Louisiana and southern Arkansas. Through pressure maintenance the recoverable reserve of crude will be increased and, in addition, a substantial amount of lighter liquids other than crude will be extracted from the gas. Sixteen companies holding producing property in the field have formed the Haynesville Operators Committee to unitize completely operation of the 12,000-acre producing area with its 160 wells. Gathering system has been installed to collect and recompress casinghead gas, and the new high-pressure absorption type liquid recovery plant is more than 90 percent completed.

There are no unusual conditions in the field, which has produced for a number of years from the 5500-foot Pettit lime pay, with original 2500-pound bottom hole pressures having declined to 1500 pounds. The gas-oil ratio is 1700 to 1. The system will process 16 million cubic feet of gas daily and re-inject 14 million cubic feet to maintain reservoir pressure. It is estimated that recoverable crude reserve, already three-fourths depleted, will be increased by 5 million barrels, and, in addition, the plant will recover more than 300,000 barrels of natural gasoline, butanes, and propanes annually at a total cost for the entire system of only $2,000,000.

It has been pointed out that aside from the obvious conservation advantages, it is economically sound practice. Many fields in Louisiana, Texas, and elsewhere are producing oil at such rates that even with ratios of 2000 to 1 a tremendous volume of gas and light liquids are being flared which might otherwise be saved by such systems.

Petroleum Use By U. S. Armed Forces

THE use of oil in war has received considerable publicity, especially the statement that two thirds of all the tonnage shipped overseas consists of petroleum products. However, the January, 1945, issue of the American Petroleum Institute *Quarterly* contains some new and interesting statistics on the use of petroleum by United States armed forces:

The United States Army in France has received 7,443,692 barrels of gasoline and diesel oil in bulk landed on the shores of North France since D-day (June 6, 1944), and has stored, transported and packaged most of it. French get small quantities for essential civilian use. The imports of gasoline alone now average 79,570 barrels per day.

Ninety-seven percent of the gasoline and diesel oil landed in France are decanted into 5-gallon jerry cans before going to the front. The United States Army has imported about 13 million jerry cans for this purpose. At 4½ gallons each, these can represent a possible floating storage of 58 million gallons, or almost 1½ million barrels. At one point in northern France, 1¼ million gallons of gasoline were decanted from a pipe line into jerry cans in a single day.

Of the 79,570 barrels of gasoline shipped in bulk to the Army in northern France, 34,000 barrels or 43 percent moves inland from French ports through two American Army pipe lines. The remaining 45,000 barrels moves by tank cars and tank trucks.

At the end of July, 1944, total storage capacity was 297,000 barrels on the shores of North France, most of it built during the battle of the beaches. By the end of the year, total storage capacity was 1½ million barrels. Almost a million barrels of this was built in the last two months of the year. Construction continues steadily.

Up to November, 1944, the Army Air Forces had used more than 2 billion gallons of 100-octane gasoline and expended only 238 million rounds of ammunition. United States military demands for gasoline reached 800,000 barrels daily, or 24 million barrels monthly, in 1944, a jump of 433 percent since Pearl Harbor. Fourteen million barrels of gasoline and oil are going overseas to fighting forces each month.

Fifteen percent of the United States

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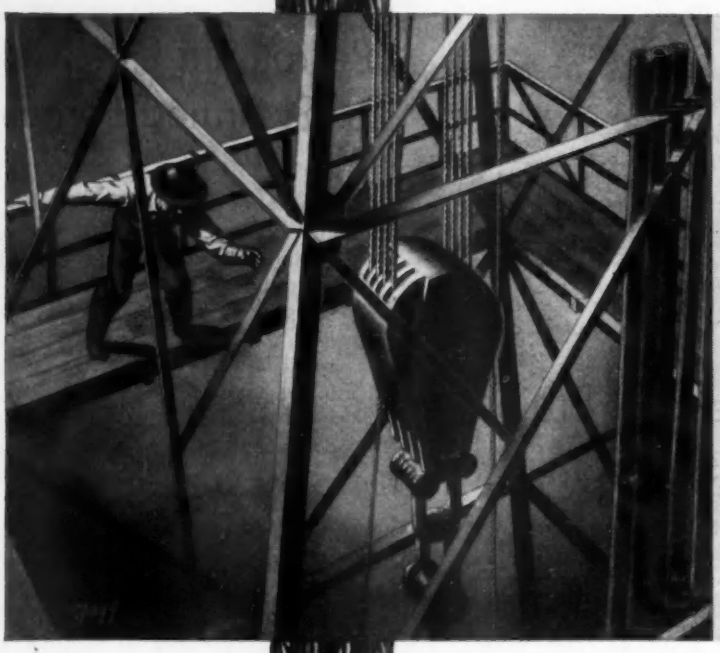

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crude oil production was converted into aviation gasoline during January, 1945. Before Pearl Harbor it was ½ of 1 percent, or 40,000 barrels per day.

In 1944, fifty million gallons of engine oil, three million gallons of gear lubricants, and 45 million pounds of grease were shipped overseas.

The United States Fifth Fleet burned up 630 million gallons of fuel oil in 7 weeks during June and July of 1944. This is more than was used by the whole Pacific Fleet in 1943. Delivered at one time, 105 tankers would have been required.

Making the Most of Living in America

HERE is a word picture of an oil-company pipe line station in an isolated West Texas district: On the station tract are a dormintory and three company-owned cottages. The men are proud of the appearance of their grounds. The well-kept ornamental hedge around the pump house is a source of pride; it rises from a wide expanse of lawn carefully groomed by a yardman. Behind each cottage is a colorful flower garden and a flourishing victory garden, the latter supplying fresh vegetables in abundance, the surplus being canned by station wives.

Here is an account of the kind of citizens the pipe-line employes are: The group stands highest among the war bond purchasers in the Texas-Gulf area. Both the station and maintenance employes have fine records of working without disabling accidents.. Five of the workers have been called for military service; three have been honorably discharged. Service to the community includes a volunteer fire department made up of the pipe-line employes; one employe is serving his fourth term as a member of the school board; another is head of the local Masonic lodge.

From the above one would have to conclude that this community is a fairly normal, happy, and moderately prosperous place, at least. If the imagination is not dead, one could conceivably think of the place as delightful, affording happiness and contentment for some fine American families absorbed in living and making the most of it.

It isn't at all a picture of a community developed by a great, grasping, devouring, robber-baron industry, bent on having the "last ounce" from its employes. This same picture could be multiplied thousands of times in this country, in many other industries. It's something to think about, in these times of uncertainty and change.

No Loose Economy 'Til Jap War Ends

FOR the oil industry, the major reversal in policy just announced by the high command of our army, is likely to mean continued demand for crude and its products at a rate comparable with that of the present until the war with Japan is over.

Decision of the high command to re-equip American armies now fighting in Europe before they are transferred to the Pacific, after V-E day, indicates a very closely controlled reconversion period for all industry. In fact, according to the announcement, the process of reconversion will be gradual, so much so that shortages of goods, especially those which use metal in their manufacture probably will continue with little or no improvement until the Pacific war is won.

Land armies used against Japan will be much larger than was originally planned. They will fight in China and on the Japanese home islands. Proposals for a "new fleet" in the Pacific, also means that shipbuilding will probably continue at an accelerated rate until Japan is beaten.

Officials expect military production to tax facilities until V-E day, and then the most that can be hoped for immediately will be the release of enough labor, materials and facilities to start preparations for reconversion. Summing up the prospect, one official said "This country's economy will not be loose at any time until the Jap war is over."

Big Oil Income in The Biggest State

THE commercial value of oil and gas at their source of production has a tendency to obscure to the general public the importance of these minerals as the basis for industry. It is doubtful if very many people know that in Texas, for instance, farmers and ranchers have in the last 25 years received from the Texas petroleum industry in the form of lease and royalty payments 13½ cents for every crop dollar produced.

Of particular significance to the people of Texas, as pointed out by the Texas Mid-Continent Oil & Gas Association, is the fact that most of the crude oil and natural gas produced as raw material is processed within the state for the manufacture of a multitude of valuable products.

Thus, through the petroleum industry's home-processing plants, such as oil refineries and plants manufacturing synthetic rubber, natural gasoline and carbon black, the wealth made possible through the production of these natural resources is multiplied many times to create gainful employment and taxable values.

If private initiative and free enterprise again are allowed to prevail in the oil industry after the war, further expansion and development are sure to follow. The oil industry will continue to furnish employment for a great body of people throughout the nation, and through the introduction of new products and further application of old ones, will add to the general improvement in our standard of living. The industry will again become a major factor in peacetime progress, just as it has been a dominant one in the prosecution and winning of the war.

Oil Shortage a Myth Says Magazine Article

DESPITE admonitions that oil wells of the United States will run dry, if we continue to use up the precious fluid at present rates, there will be enough "black gold" for all foreseeable demands for innumerable years to some, says Lawrence H. Singer in an article called "All God's Chillun Got Oil." The article is published in the March issue of *This Month*, a new pocket-size magazine published by the Association for the Promotion of International Understanding.

Singer states flatly that we are not only "not running out of oil." He points out that new fields are being uncovered almost weekly, that wildcatters are feverishly at work, that current evidences indicate the existence of vast oil bearing strata over a large part of the United States.

"In the 85-year span extending from Colonel Drake to Curmudgeon Ickes," writes Singer, "the fear of petroleum exhaustion has never been wholly dissipated and at times has risen to near-panic proportions. Currently it is fashionable to reach for the crystal ball and mutter in mournful tones that America's oil supply is slated to vanish within 15 years.

"Honest Harold's admonitions are only the latest of an interminable series of forecasts in the same vein."

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Approximately 68 percent of the crude oil produced in the world today comes from wells located within the boundaries of the United States.

—From hearing before House Committee on Small Business

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CONTINENTAL

SERVING THE OIL AND GAS INDUSTRIES

WASHINGTON ROUNDUP

By BERTRAM F. LINZ, Washington Correspondent

PROBLEMS of supply continued last week to preoccupy administration officials as, with the recent emergency alleviated by the advent of warmer weather, they turned their attention to long-term programs designed to prevent a recurrence next winter.

Tanker Movement Saves East—At PAW it was revealed that the East Coast came through the recent freeze, with its two week-end railroad "holidays" in which only war shipments were moved, only because of a record tanker movement of 570,910 barrels daily into Atlantic ports during the week ended January 3. This was the highest movement by tanker since April, 1942, when the oil carriers were requisitioned by the war shipping administration, officials said.

Rail Deliveries Drop—The tanker movement did much to prevent East Coast communities from going dry as railroad tank car deliveries dropped to 439,722 barrels a day during the week ended February 3 and to a new three-year low of 425,155 barrels in the following week.

Would Restore Inventories—Currently, PAW is straining every effort to restore depleted inventories, fearing a return of bad weather, but it will require several weeks to get supplies back to a safe working position.

Tank Truck Schedule Upped—As its contribution toward improvement of the situation, the ODT called on all operators of over-the-road tank trucks to work them a minimum of 130 hours a week and ordered operators who could not do so to lease their equipment if requested.

Panhandle Eastern Project—In a third field, the Federal Power Commission held a quick hearing on the WPB-sponsored Panhandle Eastern pipe line project for increasing delivery of natural gas in the Middlewest before next winter.

Less Paper Work for Gas Men—Paper work for natural gas operators in parts of Texas, New Mexico and Arkansas will be reduced by a PAW order slashing the spacing requirements for the drilling of gas wells in 43 counties in those states.

India-China Pipe Line Construction Pictured as Real Feat of Engineering

Details of the India-China pipe line being constructed under lend-lease (THE OIL WEEKLY February 12) were reported to the House of Representatives February 13 by Congressman Mike Mansfield of Montana, recently returned from an inspection tour of that area.

Starting with a tanker unloading terminal at Calcutta, the line runs through Bengal and Assam, to parallel the Ledo Road and Burma Road into Kunming, China, and will consist of a 6-inch line from Calcutta to Tinsukia, in northern Assam, approximately 750 miles, where it empties into a large storage terminal, and two 4-inch lines from that point to Kunming, approximately 1000 miles.

Material for the 4-inch lines began to arrive in the Ledo area in the fall of 1943, and construction was started with engineer troops before trained engineer petroleum distribution companies arrived to relieve them. By December, 1943, gasoline was moving into Ledo.

Construction of the line involved the dismantling and porterage of a complete pump station for a distance of four miles through the jungle, and the suspension on cables of one tenth of a 20-mile section up a mountain. By December, 1944, one third of the 1000-mile line was in operation, capable of delivering 8000 barrels of fuel daily, and supplies products at all required points between Ledo and Myitkyina and beyond, Mansfield reported. The full length of the line from Calcutta to Kunming will be completed early this year.

"Three quarters of a million section pipes, each of 20-foot length, were brought from America. American labor employed received special training for three months in the States. This labor was supplemented in the first stage by more than 7000 coolies, supplied from tea-garden labor and latterly by the Indian Pioneer Corps, 2000 of whom were employed at one stage.

"It is impossible to describe the day-to-day difficulties which had to be contended with, mainly in the matter of transport, in building the line," Mansfield said. "The pipe has been laid at an altitude of more than 4000 feet and will cross ranges of 8500 feet in China. The engineers feel that the worst part of their job is yet to come when the line will have to be taken over high mountains in China."

United Gas Would Build 24-Inch, 142-Mile Line

United Gas Pipe Line Company last week filed an application with the Federal Power Commission, Washington, D. C., for a permit to build a 24-inch, 142-mile natural gas line from the Carthage field in East Texas to near Monroe, Louisiana.

United officials declined to discuss plans for the line pending action by FPC, but it is understood that the capacity would be 170 million cubic feet and that the line would tie in with a carrier serving industries in the Appalachian area.

Department of Justice Favors Patent Revisions

Legislation providing for the revocation of patents found to be used for monopolistic purposes, now being pressed in Congress, was given the support of the Department of Justice last week as a desirable cog in the machinery for the prevention of monopoly and cartels in the postwar period.

The department's approval of the measure, introduced by Representative Jerry Voorhis and currently the subject of hearings before a House judiciary subcommittee, was expressed by Assistant Attorney General Wendell Berge, chief of the anti-trust division.

Berge told the sub-committee that he is in favor of the present patent system, the results of which, he said, have been highly beneficial, but that a "series of abusive practices and persistent misuses" has arisen in certain fields which has created an "acute and urgent" problem, particularly since the outbreak of the war.

The control of patents by cartels, he reminded the sub-committee, was found to be the basic reason for our unpreparedness when the Pearl Harbor attack came, in the field of synthetic rubber and many other commodities important to the prosecution of the war.

Berge told the sub-committee that the major abuses of patents include their use to develop cartels, suppress new processes and new products, impose arbitrary and unreasonable price levels upon consumers and businessmen, restrict capacity and production, and eliminate competition and prevent the development of new enterprises.

"The evidence which has been ac-

cumulated over the years in scores of cases brought by the Department of Justice, offers abundant testimony of patent abuses from many industries," he said. "In fact, there is hardly an area of monopoly activity or a branch of production investigated by the anti-trust division which has not disclosed at some point the misuse of patents by powerful monopoly groups."

ODT Calls for Maximum Use of Oil Tank Trucks

Operation of all over-the-road tank trucks for a minimum of 130 hours a week was called for by the Office of Defense Transportation February 12, and operators using their equipment for less than that period were urged to lease it to any petroleum carrier or shipper who can utilize it during the periods if is now idle.

Maximum use of the 16,000 tank trucks which it is estimated are in operation is "imperative," the ODT said, because of the serious reduction in petroleum heavy stocks brought about by the current transportation crisis and military requirements.

The failure of many owners of tank truck equipment to lease it on a part-time basis has forced the granting of a considerable number of permits for the use of railroad tank cars on short hauls, taking them out of highly essential long haul service, it was explained. Recognizing the factors which make operators reluctant to lease vehicles, the ODT assured that it will aid them in meeting their manpower, tire, replacement parts and new equipment needs created by such leases.

Construction on Colorado Pipe Line to Start in May

Construction of the Utah Oil Refining Company's 90-mile 6-inch pipe line from Rangely Pool to Craig, Colorado, is expected to be started in May, it was reported last week by PAW. The line is scheduled to be in operation in July.

Fourteen miles of field survey had been completed and purchase of right-of-way will start shortly for Interstate Oil Pipe Line Company's project for 120 miles of 8, 10 and 12-inch lines from Mississippi fields to Baton Rouge, Louisiana, it was reported. However, the line likely will not be completed until fall because of the inability to get machinery deliveries.

The PAW report disclosed that Ohio Oil Company's 105-mile 8-inch products line from Robinson, Illinois, to Indianapolis, has been tested and is ready for operation. The Indianapolis terminal may not be completed until some time in March.

Steady progress is being made on other pipe line projects but while all pipe for Sinclair Refining Company's 23-mile 8-inch crude line from Crook's Gap to Lost Soldier, Wyoming, has been welded, only five miles have been laid in trench and, because of weather conditions, the remaining pipe has been laid on the surface and will be ditched in the spring.

Survey for the 36½-mile line between Big Sand Draw and Crook's Gap has been completed but construction work has not started. About 16 miles of pipe have been received.

Venezuela Reduces Royalty for British Company and May Have Set a Precedent

British Controlled Oilfields, Ltd., has been granted a reduction in royalty fees from the customary 16 2/3 percent to 4 percent, on output from its fields at El Mene and Hombre Pintado, in the extreme western part of the state of Falcon, Venezuela. At the same time the company and the affiliated C. A. E. company renounced rights to select exploitation parcels from 363,500 hectares of concession holdings in the same general area.

The action of the Venezuelan government in granting the royalty reduction will allow B.C.O. to continue stripper operations in the two fields mentioned without financial loss. This is the first case whereby the government has departed from its stipulation of mandatory minimum royalty of 16 2/3 percent, as stated in the petroleum law of 1943, under which all operations are regulated.

As a precedent this relief decision may be of the greatest importance—especially so with regard to the operation of newer fields in eastern Venezuela, and fields not yet discovered there. As pointed out in the January 15 issue of THE OIL WEEKLY, numerous properties in Monagas and Anzoategui are saddled with such inflated royalty agreements that even flush production from them may not be profitable to the operating companies.

This prediction is strengthened by the fact that even the standard 16 2/3 percent royalty has been found to be economically excessive in eastern Venezuela, where development and operating costs are considerably higher than in the Lake Maracaibo region.

This fee would not be excessive, however, if it were actual, rather than theoretical. It is a matter of record that before accounts are settled with the government the so-called customary royalty absorbs more nearly 30 percent than 16 2/3 percent of the value of the oil produced, what with the imposition of certain taxes, fees, and other charges—not to mention the retirement of bonus expenditures and the purchase of "transaction stamps" to legalize almost every major and minor transaction.

It can thus be seen that nothing but headaches are in store for any company that commits itself to the payment of excessive basic royalties before it has appraised eastern Venezuela properties with the drill. Obviously, if the area is to get the development that it so evidently deserves, the whole royalty situation there will have to be rationalized; and some feel that the action in favor of British Controlled Oilfields may provide the impetus.

Although late, it is not too late, some point out, for interested companies to agree to act as a unit, if possible, toward more liberal and more realistic concession contracts from the Venezuelan government. Likewise, it is to the interest of the government to acknowledge some of the blame for the situation's getting out of hand, and to take steps to correct it as soon as possible, by "renegotiating" all concession contracts to the 16 2/3 basis.

Meeting Government Oil Needs by Imports Urged

Adoption by the government after the war of a policy of filling all its petroleum requirements from import, conserving domestic reserves for a possible emergency, was recommended last week by Representative W. Sterling Cole of New York, member of a group which recently inspected Elk Hills reserve.

Admitting that his views would probably arouse much opposition, Cole said he is considering introducing a resolution in Congress authorizing the Secretary of the Navy to inquire into the matter. Under his plan the Navy would enter into negotiations with big American producers with foreign holdings to supply all its peace-time requirements. These needs, he said, could be filled from American-owned reserves abroad, particularly in the Near East.

Stripper Subsidy Changes

Twenty-five more crude pools were placed on the stripper-well premium list of OPA February 17, to receive subsidies as from February 1.

Two pools, Belleisle and Branch, Louisiana, previously on the list have been dropped after having been found to be gas fields. Premiums payable in five other pools have been adjusted, as follows: Colyer and Hall, Kansas, increased from 25 to 35 cents per barrel; Hensley, Oklahoma, increased from 25 to 35 cents; Loco, Oklahoma, decreased from 35 to 20 cents, and Seminole northeast, Oklahoma, from 25 to 20 cents.

The added pools and the premiums allowed, are as follows:

Arkansas: Troy (Nacatoch and Tokio) 35 cents.

Illinois: Cooks Mills, 35 cents; Concord east, 35 cents; Brown, 20 cents.

Kansas: Laton, 20 cents.

Louisiana: Jennings (Evangeline), 25.

Nebraska: Falls City, 18 cents.

Oklahoma: Airport, 35 cents; Beland, 35 cents; Dill, 20 cents; Jolly Patton, 35 cents; Kidd, 35 cents; McLish, 35 cents; Muskogee north 35 cents; Naval Reserve, 20 cents; Oklahoma City (Arbuckle lime), 35 cents; Robinson, 35 cents Twin City, 35 cents; Wagoner, 35 cents; Wagoner south, 35 cents; Watkins, 20 cents.

Texas: Johnson, 30 cents; Gayle, 20 cents; Goodrich, 35 cents; White and Baker, three cents.

To Discuss Oil Agreement

Interior and State Department officials and industry representatives will hold an informal meeting with members of the Senate foreign relations committee February 22 for discussion of the Anglo-American petroleum agreement. Invitations to attend have been sent to members of the PIWC national oil policy committee, William R. Boyd, Jr., and Manley Hudson.

Ohio-Michigan Gas Project Pushed; Texas Body Opposes Gas Export Plans

Details of the WPB-sponsored Panhandle Eastern Pipe Line Company program for increasing the supply of natural gas for the Ohio-Michigan area by 50,000,000 cubic feet daily by next November 1 were laid before the Federal Power Commission February 15 by D. H. Colton, counsel for the company.

The hearing, held only an hour after the formal application was received and called on an informal letter application, was designed to meet the company's request for action on the matter by February 20, in order that purchases of necessary equipment and contracts for construction might be placed immediately.

To provide additional gas supplies more expeditiously and cheaply than by construction of additional pipe lines, the company plans to install additional compressors and new valves to lift its existing line from 500 to 600-pounds pressure, and construct about 32 miles of 24-inch loops at two points on the line.

The cost of the work was fixed by Colton at $8,325,000, and it is to be financed by a $10,000,000 increase in the company's "open end" mortgage, which will be taken up by several insurance companies. The additional funds will finance field work which the company counsel stressed would have to be undertaken regardless of the Ohio project.

Although the Kansas Public Utilities Commission asked leave to intervene, its representative was not present when the hearing opened. It was also commented that the Texas Railroad Commission had offered no opposition to the project, although only a week earlier it had filed a strong protest with the FPC against Panhandle's application to transport 33,000,000 cubic feet of gas daily into Canada and shortly before had fought the Reynosa Pipe Line Company application for the export of 60,000,000 cubic feet daily to Mexico.

The only opposition voiced came from counsel for the National Coal Association and the United Mine Workers of America, who expressed fears that wartime natural gas expansions would develop increased competition for coal after the war, leading to unemployment among the miners.

The objections voiced by the Texas Railroad Commission against the Reynosa and Panhandle export projects and its withholding of objections to the latter's Ohio project were seen in Washington as evidence of a disposition on the part of the state to cooperate in any programs necessary for the war but to fight any effort to build up strong postwar position by the gas companies.

This attitude was developed by Chairman Olin Culberson in a telegram to the power commission asking a continuation of hearing on the Panhandle application in order to develop "proper data in opposition," in which he said: "This application on its face shows that this tremendous volume of gas, a great portion of which will come from Texas, is not for the war effort but is for storage purposes to be used and distributed in competition with coal and at prices that are less than the value of coal."

Meanwhile, the FPC disclosed that Panhandle, which had filed an application for a presidential permit to build the facilities necessary to connect its lines at Detroit with those of the Union Gas Company of Canada at the international boundary, has filed its application for authority to construct the 16-inch and 12¾-inch lines and pressure-reducing and measuring stations through which it proposes to move, during the spring, summer and fall months, between 5,500,000,000 and 6,325,000,000 cubic feet of gas. Much of which would be stored underground in Ontario province to be drawn against during the winter months.

Hawkins Field Suit

Trial of the suit brought by Humble Oil & Refining Company, attacking the Hawkins proration order began in 53rd District Court at Austin last week. The case is being tried before a jury.

The court overruled pleas by the townsite operators that the case be thrown out, on the grounds that Humble had agreed to the original proration order.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED February 17	February 10
Alabama	250	300
Arkansas	81,600	81,550
California	895,500	893,700
Colorado	9,550	9,350
Florida	30	50
Illinois	204,000	205,100
Indiana	13,050	13,200
Kansas	271,350	252,800
Kentucky	30,300	30,200
Louisiana	362,750	357,500
North Louisiana	68,250	68,300
South Louisiana	294,500	289,200
Michigan	45,250	46,800
Mississippi	51,500	46,800
Missouri	100	100
Montana	21,660	23,230
Nebraska	900	950
New Mexico	104,750	104,100
New York	13,300	13,100
Ohio	6,750	6,550
Oklahoma	366,300	363,550
Pennsylvania	32,100	31,750
Tennessee	35	35
Texas	2,146,450	2,141,350
Upper Gulf Coast	562,050	552,650
East Texas Field	392,000	391,950
Rest of Eastern Texas	144,200	144,100
Lower Gulf Coast	246,650	243,900
Southwest Texas	79,900	78,400
South Central Texas	20,500	20,050
West Texas	464,350	478,550
North Texas	148,700	143,050
Panhandle	88,100	88,700
West Virginia	7,100	6,750
Wyoming	99,550	94,850
Total United States	4,764,125	4,723,665

Bureau of Mines Report

Total stocks, foreign and domestic, February 10, as reported by the Bureau of Mines were: 218,894,000 barrels with a daily average output of 4,729,000; and runs to stills 4,770,000 barrels.

Senator Tunnell Reports On Middle East Inspection

No great increase in oil supplies with which to fight the war is to be expected from the fields of the Middle East, the Senate was told February 15 by Senator James M. Tunnell of Delaware who, with Senator Harold H. Burton of Ohio, recently made an investigation of military installations there. Tunnell explained that lack of refineries and transportation facilities limits the supplies available from the Middle East fields, but recommended that "our government should take into consideration this situation in its broadest aspects at the peace table."

Only about 400,000 barrels of crude daily is being refined in the entire area, the senator said, but this production, although small in quantity, is of high value in the war program, since the refinery at Abadan is producing high-octane gasoline. Tunnell pointed to the calculated reserves of the area, lying near the center of the world's population but remote from the center of oil consumption and suggested the desirability of developing nearby markets for the oil.

Two Patents Touch on Electrical Prospecting

Two patents covering a new method of electrical prospecting for oil have been granted to Dr. Harvey C. Hayes of the Naval Research Laboratory.

Both patents are concerned with a method of determining the presence or the physical characteristics, such as the probable boundaries, the depth and the inclination, of an oil-bearing formation through measurements, along a profile line, of differences of electrical potential caused at least in part by the natural currents of the oil-bearing formation, and plotting a curve the ordinates of which depend upon the differences of potential and the abscissae of which depend upon the positions of the points of measurement.

If the curve is of a type that has a critical feature or features known to represent earth potentials resulting from current streams arising from the peripheries of a known type of oil-bearing information and known to indicate the presence or the physical characteristics of the known type of oil-bearing formation, determination may be made by analogy of the probable presence or characteristics of an oil-bearing formation.

Carbon Black Restrictions

Restrictions in the use of carbon black in tires were ordered by the War Production Board February 15, which will save 7,500,000 pounds a month toward a curtailment of 10,000,000 pounds monthly estimated by the board to be necessary until new production facilities come into operation late this spring.

Effect of the order will be to cut back the amount of carbon black used in heavy-duty truck tires, tubes and tire flaps, and in medium-size truck tires by 5 percent, while the amount of passenger car tires will be cut 25 percent. The amount of carbon black permitted in belting, hose, packing and gaskets also will be reduced, the extent varying with the nature and service of the product.

Industry's War Role Praised, National Oil Policies Suggested at Dallas Meet

Praise of the role which the oil industry, developed through the American system of free enterprise, has played in meeting the emergency of war, freedom from all government subsidies and the necessity of developing an intelligent national oil policy, were stressed in Dallas last week when First National Bank in Dallas entertained 500 men of the oil fraternity. William R. Boyd, chairman of the Petroleum Industry War Council and Ralph Zook, president of the Independent Petroleum Association of America, and Maston Nixon, president of Texas Mid-Continent Oil and Gas Association, were the principal speakers. Vice President Eugene McElvaney was master of ceremonies and he and other bank officials added their tributes to the oil industry, especially in Texas.

"The security and well-being of this nation demand that industry and government set to work earnestly and intelligently to provide a program which will encourage the finding and development of crude oil reserves within the boundaries of the United States," Zook declared. As a basis for such a policy, he suggested the following:

1. Every barrel of oil, regardless of its source, must be made available to the Allied nations for their use in winning the war and maintaining their civilian economy.

2. If imports are necessary, postwar, to supplement our domestic supply, they should be only in amounts required to furnish adequate government and civilian requirements. They should not be in quantities that will be harmful to our domestic oil industry.

3. The price of crude oil within the United States should be such as to: (a) encourage the exploration for and development of new flush production; (b) preserve wells of small production and (c) encourage second-recovery operations.

4. The development of substitute fuels should not be neglected.

"With such encouragement," Zook declared. "the oil industry of the United States can have confidence in going ahead to increase the oil reserves and producing capacity of the nation to make us self-sufficient both in time of peace and war."

PIWC Chairman Speaks

There need be no fear about the future of the petroleum industry as long as leadership of the industry is in the hands of wise and able men and that leadership is not "hogtied" by needless political interference. But the right of the industry to survive depends on its ability to provide the kind of leadership necessary, Boyd declared.

The speaker paid tribute to the pioneer spirit of the founders of the petroleum industry. "If that pioneering spirit is encouraged and permitted by government to continue," he said, "then there is no need to fear any shortage of oil."

Encompassing the whole field of private endeavor and initiative, the speaker pointed to the fact that the average American today is better fed, housed, and clothed than the people of any other nation ever were in history—this in spite of wars, depressions and disasters. Freedom to dream, study, think and plan, and then to act to make dreams and plans come true have made this possible. "Many a business or political leader," Boyd declared, "came up the hard way, sweated out their own education and were glad of the chance. That accent on individualism, the opportunity of an American to rise as far, economically and socially, as his desires and his talents permit, has made this country rich and powerful. If we drastically restrict those rights by any form of regimented economy, no matter how attractive or seductive the totalitarian blueprint may appear, then these United States will cease to be the land of opportunity."

Full cooperation between PAW and the industry in the solution of the many problems that have arisen in connection with oil during the war, demonstrates how government and industry can work together, in Boyd's opinion. He called it a "unique arrangement, the only one of its kind." "I am sure," he continued, "that official Washington and the Congress (and I hope some of the public) are aware of the effectiveness of this government-industry team."

Boyd also stressed the gigantic problem of supplying oil to the military forces and the home front at the same time. He praised the petroleum industry generally for the successful effort, but singled out Texas as volumetrically oil's chief contributor to Allied annihilation of the Axis.

"Every oil state is doing its level best but the fact does remain that were it not for the large volume of Texas oil, the United States could not be fighting on two sides of the world at the same time," he explained.

Nixon Speaks

Declaring that national defense required a healthy oil industry, Maston Nixon, president of the Texas Mid-Continent Oil and Gas Association, asserted it was necessary for the industry to have a price that would encourage the finding and producing of more, and also be unshackled from government regulation. He urged the industry to free itself of wartime subsidies, and suggested repeal of the federal gasoline tax and substitution of a one-cent increase in the price of gasoline as a way to gain the necessary price without causing inflation.

"To have a healthy industry that will be prepared in the future for the nation's defense as we have been in the past," Nixon said, "we must be unshackled and have a price that will provide the incentive to find more oil that may be developed under our system of proration and to provide for high rates of production in time of great need. The oil industry should free itself of any wartime subsidies. It cannot be free and at the same time accept dollars from federal government.

"One cent per gallon increase in gasoline with a 35-cent average price raise for crude should be placed in effect at once to partly correct the great injustice that has been done the industry," he continued. "Some say it would be inflationary. Actually to the holder of any A card it would be less than the cost of two cups of coffee per month. Of course, if the administration continues to feel that subsidies are the answer, then why not repeal the federal tax of one cent per gallon and permit the increase in price of gasoline with its corresponding increase in crude prices? There would be no increased civilian prices and no administrative expense."

Russell B. Brown of Washington, general counsel of the IPAA, pointed out the financial, educational and other benefits derived from the American free enterprise system, and especially of oil, and concluded with this thought:

"I pay tribute to the individual enterprise of the American oilman. We must look behind the individual to the government that has made possible the full use of that enterprise, and to the ideal for which it stands. In making manifest the appreciation for petroleum's contribution to the wealth of America, we must pay tribute to the government that made it possible. We should here, and at every opportune time, renew our determination that this government must not fail."

Decker Is Named Assistant To Pan American Executive

Pan American Production Company, Houston, has announced that Harold Decker has been appointed to first assistant to E. R. Turner, vice president and general manager of the company. Decker will act as assistant manager of the Pan American Production, Pipe Line and Gas Companies.

Harold Decker

He has been in the oil business since 1925 when he joined the Rio Bravo Oil Company, in Houston. A year later he went with the Marland Oil Company as petroleum engineer doing field and research work in Oklahoma, from 1929 to 1930 was with Tidal Oil Company in Tulsa, and then with Skelly Oil Company as petroleum engineer and subsequently as district superintendent at Seminole, Oklahoma, and division superintendent of the Texas Gulf Coast, at Houston. In 1937, he joined the Seaboard Oil Company as district superintendent for the coastal and southwest Texas area in charge of production, land and geology, remaining in that position until February 1, 1945.

Carr and Covell Promoted

Richard H. Carr has been promoted to the post of chief research engineer in the producing division of The Pure Oil Company, Chicago. He is a native of Virginia, has been in Pure's employ since 1919, and for several years has been chief production engineer.

Kenneth A. Covell has been transferred from Fort Worth, Texas, where he has been production engineer in Pure's Texas Division, to Chicago, where he becomes chief production engineer. He has been in Pure's producing division for 12 years.

Production Department Changes Made by Humble

C. E. Reistle, Jr.

Bowman Thomas

Carl E. Reistle, Jr., has been named general superintendent of production for Humble Oil & Refining Company, Houston, in which position he will have direct executive responsibility for the company's production department, under general direction of David Frame, the newly elected vice president in charge of production. Bowman Thomas will succeed Reistle as chief petroleum engineer.

Reistle, who served with the Bureau of Mines for 11 years until 1933, joined the company in 1936 as assistant chief petroleum engineer and was advanced to head of the department in 1940. Prior to his association with the Humble company he served for 3 years as chairman of the East Texas Engineering Association. He is technical advisor to the District 3 production committee of the Petroleum Industry War Council, is vice chairman of the National Crude Oil Industry advisory committee, and a member of engineering and scientific societies.

Thomas, new chief petroleum engineer, has been assistant chief petroleum engineer since 1940, having joined the company in 1929 as junior petroleum engineer. He has been active in the work of the American Petroleum Institute, being a past chairman of the Houston chapter, and is author of two technical papers on production operations. He is also a member of the American Institute of Mining and Metallurgical Engineers.

David Gray Resigns from PAW to Take Humble Post

David G. Gray, for the past 2½ years executive secretary of PAW District 3 general committee, joined Humble Oil & Refining Company February 15.

Chairman Charles F. Roeser, who called Gray's work with the committee "an outstanding service for the industry and the nation" said that Gray would continue with the duties as executive secretary until other arrangements are made.

Gray, a native of Mississippi, came to Texas in 1915 in the oil purchase division of The Texas Company to which company he returned after two years overseas service in World War I. In 1925 he became vice president and later president of Dale Oil and Refining Company, Wichita Falls, Texas, and from 1931 to 1935 was with Waggoner Refining Company. Later he engaged in private drilling operations and shortly after Pearl Harbor he joined PAW District 3 staff, first as director for marketing. His general committee connection followed.

PAW Paper Work Slashed For Natural Gas Operators

Operations of natural gas operators were facilitated and paper work reduced by PAW last week in the slashing of spacing requirements for natural gas well drilling and development in 43 north and west central Texas counties, San Juan County, New Mexico, and west central Arkansas.

Heretofore, drilling units of 640 acres were required for each well, regardless of its depth, but under the revision drilling will be permitted 1500 feet on an 80-acre unit, to 3500 feet on 160 acres and to 5500 feet on 320 acres.

The revision was recommended by the industry committee for District 3 after a study of the gas production problems within its area. PAW officials said it will not result in the drilling of many additional wells, but it will relieve operators of the necessity of applying for exceptions, many of which were required under the former 640-acre spacing requirement.

Counties affected by the order are: Crawford, Franklin, Johnson, Pope and Sebastian, Arkansas: San Juan, New Mexico, and Archer, Bayer, Brown, Callahan, Clay, Coleman, Comanche, Cooke, Coryell, Eastland, Erath, Foard, Fisher, Hamilton, Hardeman, Haskell, Hood, Jack, Jones Knox, Lampasas, Mills, Montague, Nolan, Palo Pinto, Parker, San Saba, Somervell, Shackelford, Stephens, Stonewall, Taylor, Throckmorton, Wichita, Wilbarger, Wise, and Young, Texas.

February Demand Is Set at 4,725,000 Barrels Daily

Daily average demand for domestic crude oil this month will run to 4,725,000 barrels, approximately 31,800 barrels less than PAW certifications but 270,000 barrels, or 6.1 percent, above demand in February, 1944, it was forecast February 12 by the Bureau of Mines.

The bureau reported that the downward trend in stocks was checked last month when, after an average daily stock withdrawal of 2000 barrels in November and 20,000 barrels in December, the demand for domestic crude in January dropped 18,700 barrels daily under forecasts. The total decline in stocks in 1944 is estimated at about 21,000,000 barrels.

With the February forecast the bureau dropped its estimates for motor fuel, since production and distribution are subject to special programs and allocations by PAW.

Use of Helium Increases

Commercial distribution of helium gas last year more than doubled that of 1943, amounting to 2,187,205 cubic feet against 1,059,655 feet, it was reported by Secretary of the Interior Ickes February 15.

The great increase in commercial consumption to nearly 30 times that of 1938 is due to new uses developed during the war, one of the most important of which is in the welding of magnesium and its alloys in aircraft plants.

The secretary's report did not indicate the volume of military consumption of helium, but said that production of the gas now is more than 25 times that of prewar days and can be increased further "on a few hours' notice."

Major Changes Made in Humble Official List

Hines Baker

David Frame

Hines H. Baker was named to fill the newly-created post of executive vice president for Humble Oil & Refining Company at a directors meeting February 12, following the annual stockholders meeting at which the new office was created. David Frame was named vice president in charge of production, and Harry W. Ferguson was added to the board of directors. The stockholders also amended the by-laws to provide for an assistant treasurer and an assistant cashier. All other directors and officers were reelected.

H. W. Ferguson

Baker has been a director since 1937, having served in the legal department of the company since 1919, and for the past 4 years has held the post of vice president in charge of refining and sales.

Frame, new vice president in charge of production, also joined the company in 1919, in the scouting department, and after serving as superintendent of production in several of the company's divisions, came into the Houston office in 1930 as general superintendent of production. He has been a director since 1941. Both he and Baker served overseas in World War I as artillery officers.

Ferguson will have direct charge of refining. He became associated with the company in 1924 as a chemical engineer in the Baytown Refinery's development department, and served as chief of both the cracking and technical service divisions of the development department before coming to the Houston office in 1933 as assistant manager of technical and research work in the refinery department, being made assistant to the manager of the refining department in 1937. Since 1941 he has been manager of operations in refining.

Craig Returns to PAW Position in Washington

Appointment of Lucien F. Craig as assistant director of the PAW supply and transportation division was announced February 12 by Deputy Administrator Davies.

Craig is returning to the post he held from March, 1943, until February, 1944, when he resigned to return to his position as assistant general manager of fuel sales for the Gulf Oil Corporation, and was called back to PAW because petroleum supply and distribution problems again have become critical.

Texas Gas Conservation and Utilization Plan Outlined by Dr. E. P. Schoch

A comprehensive, long-range plan for conservation of natural gas in Texas was submitted to the Railroad Commission last week, by Dr. E. P. Schoch, noted professor of chemical engineering at the University of Texas. He has expressed himself freely on the whole subject of natural resource conservation many times, but not always has he gone into the solution of the problem he posed. This time, however, he was specific and to the point; not only did he state the problem and support it by a mass of evidence, but he suggested a solution and outlined the benefits that in his opinion would inevitably follow should the plan be put into effect.

The problem in gas today is similar to that of oil in 1931, Schoch declares. Then, due to the great surplus, crude oil sold for as little as ten cents per barrel in East Texas. The market demand proration law passed in 1932 steadied production and saved the day. Gas is being sold at the wells today at prices ranging from one cent to five cents per thousand cubic feet. "At this low price," he says, "it is being used for purposes for which lignite could be used and it is being exported in gradually greater amounts. Furthermore, large gas supplies which do not reach public pipe lines are used in a manner which secures a still smaller return than the gas reaching pipe lines. As a result of all this, the total amount of gas now withdrawn annually from the ground has increased to nearly two trillion cubic feet, and if this rate of increase is not checked, it may rise to three trillion in ten to fifteen years. Estimates of our known gas reserves range from 50 to 70 trillion cubic feet, and the probable discoverable amounts may double this; but this is strictly our maximum expectation. With an annual withdrawal of three trillion cubic feet, our gas age may be wholly at an end in 40 years, or possibly 30. It is the low price now paid for gas at the wells which is responsible for the present situation; and just as with oil, so in this case, proration based on the proper estimate of the *market demand* can cure the whole situation."

Schoch's Proposal

Summarized, the four-point proposal for conservation is as follows:

1. Gas to be used in large amounts (such as 100 million cubic feet, or more, per annum) for purposes for which lignite or other cheap solid fuels can be used shall hereafter be excluded by the Railroad Commission from their estimate of *market demand* for public gas lines; but this provision should not be used to decrease the total volume allowed for existing gas lines below the amounts they now carry.

2. The price to be paid to gas owners by pipe-line operators shall be gradually raised from its present figure to a figure near or above 10 cents, in accordance with the market demand as defined in the preceding paragraph.

3. To increase the market demand in Texas, there shall be instituted an effective program of industrialization aided by specific provisions for new industries, particularly those using clays, cotton, and natural gas itself as a material for manufacture.

4. Gas supplies such as those used for carbon black and for all lifting which are now disposed of through other means that "common carriers" should be given special technical study with the view of reducing unprofitable or wasteful outputs of gas.

These four actions can be expected to bring the following results, suggests Schoch:

Results of Program

a. The total income of gas owners will be increased from $23,000,000 to $100,000,000 per annum.

b. The length of the gas age will be made three to four times as long as it would be without such a procedure.

c. Pipe line investors will suffer no losses of income on their investment.

d. Texas prices of domestic and commercial gas will not be increased—perhaps even decreased; and special industrial gas will be available at lower rates than in the Northeastern states.

e. The higher fuel costs which large industrial users will have to bear will not affect them substantially because even with lignite, the fuel item is only one third of the total power cost. Furthermore, these large industrial users will be merely reassuming a cost which in the meanwhile is being carried mainly by the well owners, and in lesser degree, by the other fuel users.

In the opinion of Schoch, the Railroad Commission has the power and "duty to fix the prices which a pipe line should pay for gas offered to it by producers, and also the power and duty to pro-rate the amounts to be taken from the different producers." Thus the professor advocates a ratable taking law. If there is any doubt about the Railroad Commission's authority to act in this connection, then "legislative action to carry out this program should be taken promptly," Schoch urges.

The commission "also has the power and duty to fix the prices to be charged for gas delivered; hence if a 'cheap gas which now is replacing lignite' is no longer allowed as figuring in the *market demand*, then an increase in the volumes of gas used for the other uses will enable the Commission to raise the well-price and with it the price for industrial gas without disturbing the price of domestic or of commercial gas; and this procedure will gradually eliminate the use of gas which is replacing lignite," he contends.

The industrialized Northeastern part of the United States follows practices strictly in accordance with the proposed plan, it is said.

More extensive industrialization is the key to higher prices for gas at the well, Schoch says. Texas now has 776,000 domestic and commercial gas consumers which use 0.120 trillion cubic feet per annum, he points out. "Since," he explains, "the greater part of these are domestic consumers, averaging five persons per family, this indicates that about half of the people in Texas use gas in their homes, and a great increase in the consumption of domestic gas cannot be expected. Since the pipe lines now distribute 0.556 trillion cubic feet annually in Texas, it follows that a large increase in commercial consumers is necessary in order to consume most of the present pipe line capacities and thus make it possible for the distributing companies to pay a higher well price.

"This increase in commercial users requires extensive industrialization: Not the bringing here of industrial giants, who by their size may be enabled to arrange for their own gas supplies direct from the wells, but the establishing of medium-sized industrial projects which will draw gas from public pipe lines, thus increasing the demand for commercial and special industrial gas.

"The efforts to industrialize Texas have been made for some years. In order to be effective, such efforts must be made by many; and fortunately, that is the case. However, there is an important part of our industrialization program which has been left out of consideration by others; namely, the setting up of industries with which our citizens are not familiar, or which are wholly new industries. Efforts to set up such new industries have been generally fruitless so far, because such ventures are unknown to investors, and difficult and costly. Hence, investors have to be given special help through Investors' Institutes. Such institutes, in order to be able to accomplish their tasks, must be specific for each industry, and of large scope."

In order to obtain additional "research and investor's institutes" of the same sort either now or in later years, Schoch recommends that the Legislature should go on record as favoring the granting of financial support for such projects, provided:

Three Institutes Suggested

Each project is specific in the field it covers; each project is headed and directed by a competently trained man of the "Edison" type rather than an "executive"; and each project has been taken through an adequate initial developing stage with the expenditure of substantial funds to reveal the possibilities for which larger sums are asked.

To finance the three research institutes mentioned especially by Schoch, namely natural gas, clay products and cotton, he proposes that the Legislature give them about one fifth of the present tax receipts for gas, about $400,000 per annum, one half of which should go for development of new products from gas, inclusive of carbon, one fourth for the clay industry, and one fourth for new products from cotton. This assumes, he says, that the "University of Texas may start the program by furnishing the funds for the buildings and equipment necessary at an approximate cost of $400,000."

Among the products which new enterprises could produce in Texas, for which raw materials are already available, Schoch said, are: Agricultural and dairy products, processed foods ready for the consumer; forest products, particularly pressed boards, plywood, paper products from saw-dust waste; nonmetallic mineral products, particularly fine clay ware, art pottery, new wall tiles; tanning and leather products, ready for the trade; cotton and wool textiles and their products ready for the consumer; chemicals, raw plastics and crude rubber from petroleum and gas; manufactured articles from plastics and rubber.

Development in Years!

EVER since 1928, Cooper-Bessemer has been experimenting to perfect a means of using gas as a practical diesel fuel and to permit instantaneous change-over from fuel oil to gas and vice versa. It can now be announced that these efforts have been completely successful — a truly revolutionary accomplishment.

Without exception, all of the advantages inherent in full diesel operation are retained. In fact there has been no modification whatever of the characteristic diesel principles. Thus the fairly common 35 per cent thermal efficiency of the conventional oil-burning diesel is just as readily reached when burning gas — a full 30 per cent increase in thermal efficiency over the best gas engines of the electrical ignition type.

An important factor in this new development is the admission of gas at normal pressure, assuring customary diesel reliability, avoidance of complications, and low maintenance.

Of extreme significance in many services, instantaneous convertibility from one fuel to the other is in itself an outstanding accomplishment. It is as simple as opening one valve and closing another while the engine is running at full load.

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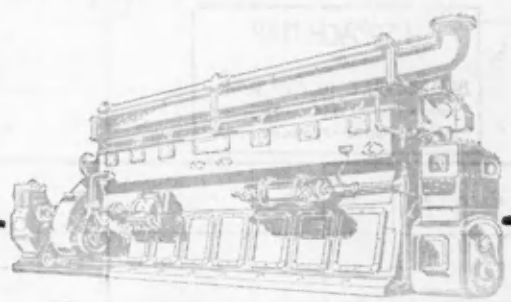

Corporation Mount Vernon, Ohio — Grove City, Pa.

Gas Repressuring Increases Glenn Pool Recovery

By JOHN F. SAGE
Sinclair Prairie Oil Company

Thirty-six older projects show accumulative increase in oil production due to secondary recovery methods of about 2 million barrels. Successful continuance of work and ultimate recovery handicapped to some extent by line well operators who have not started activity.

THE principal oil producing horizon of Glenn Pool is Bartlesville sand, locally designated as Glenn sand. Other formations which have produced minor amounts of oil and/or gas in small localized areas within the pool are the Red Fork, Taneha, Dutcher (mostly gas), and Wilcox.

The accumulation of oil at Glenn Pool is due, in broad viewpoint to the Glenn sand thinning or pinching out up dip into shale to the north and east. This wedge or pinch-out formed a stratigraphic trap. The early drillers

THIS article is a review of the paper, "Gas Repressuring at Glenn Pool," given by K. B. Barnes and John F. Sage at the spring meeting of the Mid-Continent District API Division of Production at Tulsa May 20 and 21, 1943, and covers new developments in this pool from April, 1943, to December, 1944.

The pool is generally referred to as the Glenn Pool, and the North Extension. Glenn Pool covers 8100 acres in twp 17N, range 12E, and the North Extension covers 8400 acres in twp 18N, range 11E, Tulsa County.

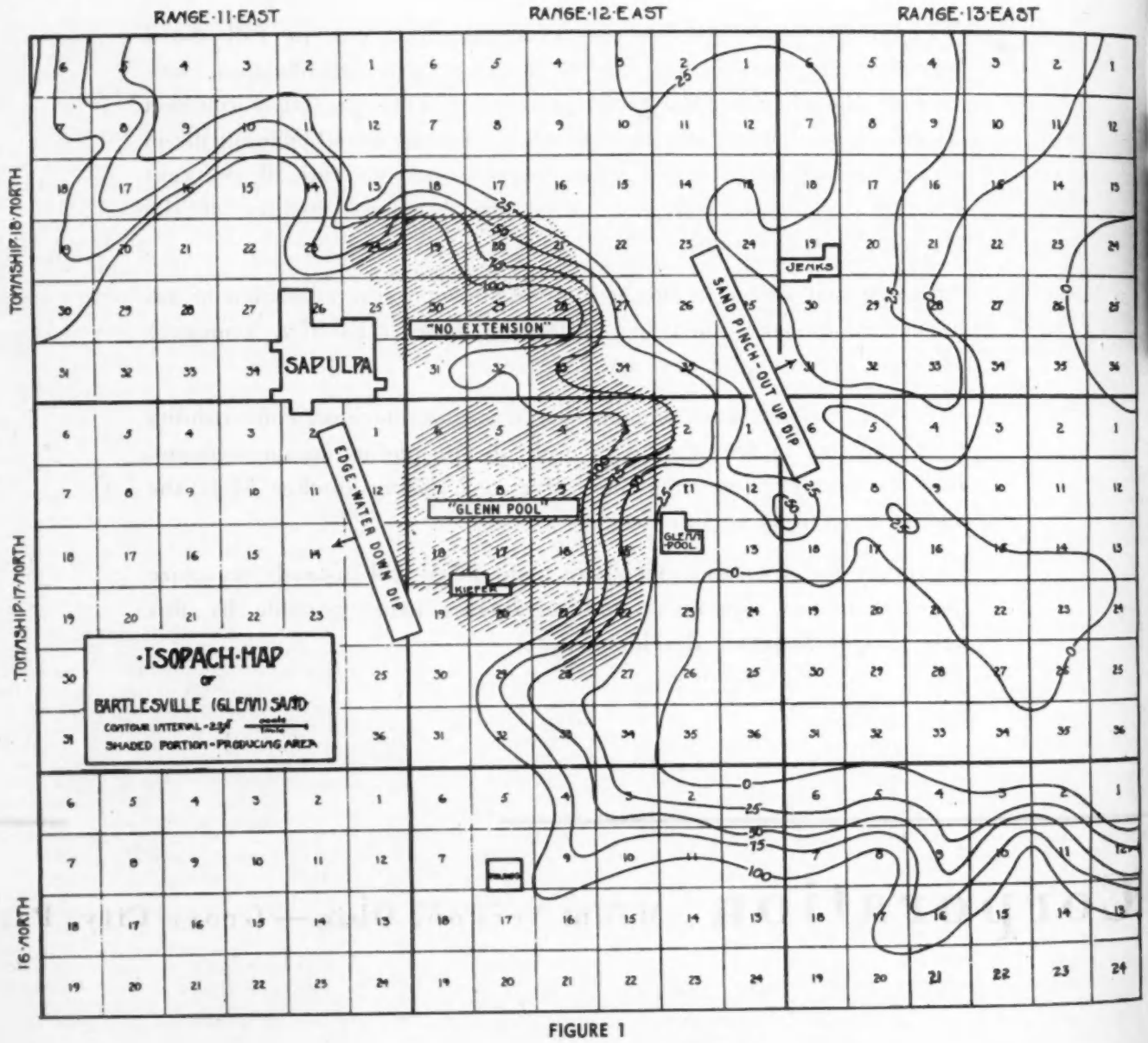

FIGURE 1

When subjected to the abrasive action of drilling fluid, conventional valves, employing a metal-to-metal seal, often quickly cut out and lose their seal. As a rule, costly repairs are required to restore them to their former usefulness.

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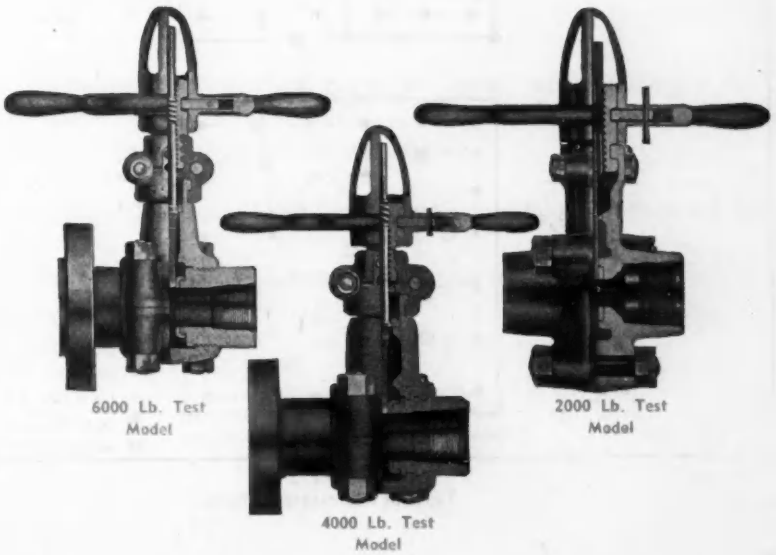

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found the sand to be of greater thickness, porosity, and permeability in Glenn Pool than in the North Extension, which led them to believe Glenn Pool and the North Extension were separate pools.

Later drilling proved the pools to be one reservoir, with the most productive sand in 17N and 12E, as shown by the Isopach map (Figure 1). The Isopachs are constructed on the base of total thickness of Glenn sand from top to base. It will be noted that in the south and west of Glenn Pool the total thickness is in excess of 100 feet while in the northeast it diminishes to negligible amounts.

Early Pool History

When the discovery well was brought in at Glenn Pool in 1906, the closest pipe line connection was that of Prairie Oil & Gas Company (now Sinclair Prairie Oil Company) at West Tulsa, which carried oil north and east. Prairie Oil & Gas Company immediately built a 2-inch line from West Tulsa to Glenn Pool. At that time no one realized the extent of the pool.

After a few wells were drilled other companies, realizing the magnitude of Glenn pool, started to build lines to the pool. Gulf Oil Company (then known as Gypsy Company), The Texas Company, and Oklahoma Pipe Line Company built lines starting at Glenn Pool and running to the Gulf Coast. These four lines took care of the oil for only a short time, because new fields discovered in Louisiana flooded the lines, and it was necessary for the operators at Glenn Pool to build storage tanks to hold their oil until it could be piped from the field. These tanks were of numerous types and sizes. Some were earthen, while others were of wood and steel, their sizes ranging from 1000 to 35,000 barrels. Probably never in the oil industry has there been a field that contained so many large storage tanks on the leases. However, these storage tanks at a later date proved to be profitable to the producers when the price of oil dropped to 28 cents per barrel. The operators were able to store their oil and hold it until the price of crude went back up to normal. In 1916 the production of the pool had declined to such an extent that the storage tanks were no longer needed and most of them were purchased by a major company, cut down and moved to other fields.

A vigorous drilling campaign was carried on in 1907 and 1908. Peak oil production of 117,440 barrels per day was reported for June, 1907. In most of the wells the sand was heavily shot and the wells flowed naturally at rates of from 500 to 4000 barrels per day during the first few months after completion. By early 1909 a large majority of wells were produced by pumping. In 1912 the first gasoline plants were installed and by 1914 vacuum was being drawn on the majority of the leases. By 1915 or 1916 the gasoline plants were gathering the gas at as much as 20 inches of vacuum. At the time repressuring was started in 1940, vacuum applied at Glenn Pool was as high as 26 inches and a strong underground vacuum existed in the reservoir.

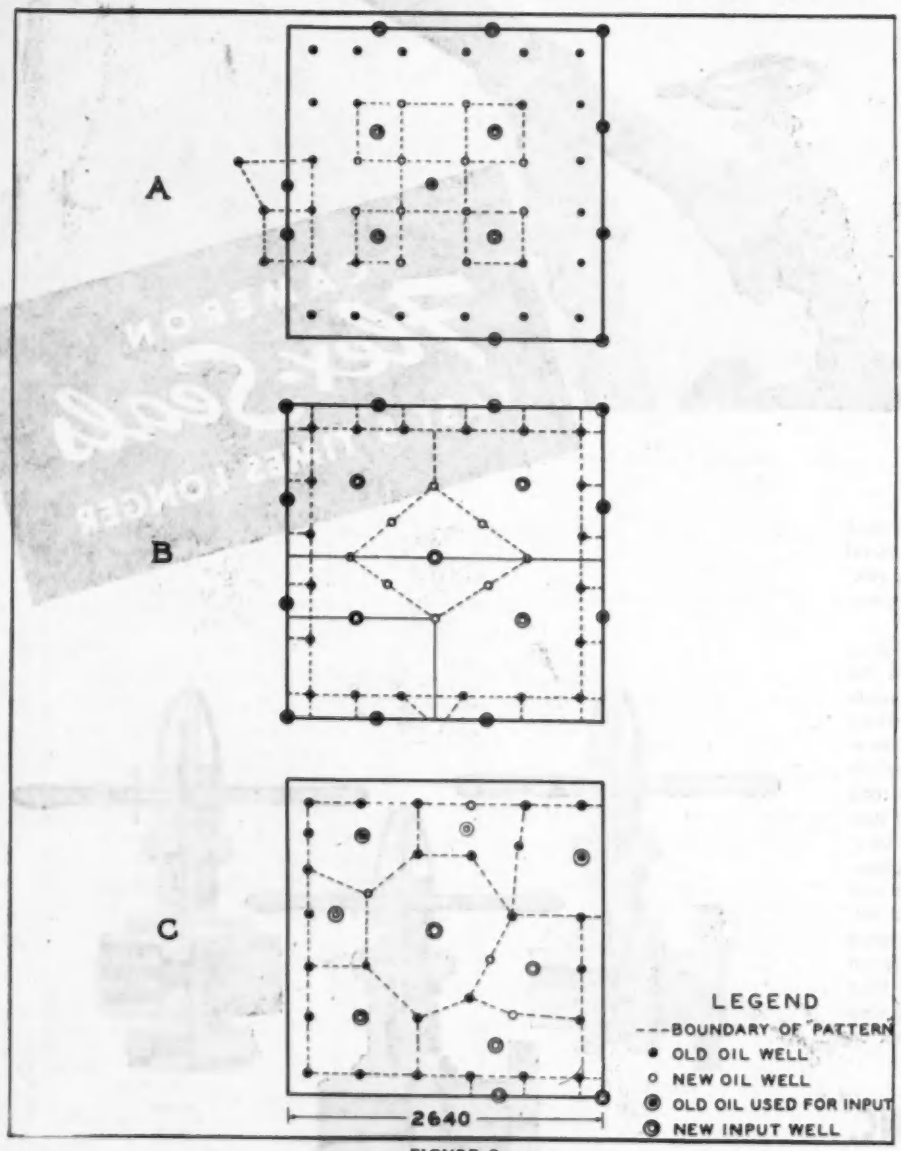

FIGURE 2
Types of Repressure Patterns

Start of Repressuring

Some experimental air and gas injection attempts were made during 1927-1928, with old oil wells used for input, but were largely unsuccessful. It is believed that the input gas quickly channelled through the upper pay section which was exposed in the heavily shot holes.

In May, 1940, the first carefully designed pattern type repressure project in the pool was commenced on the L. R. Kiefer property, the SE quarter 17-17n-12e, by Sinclair Prairie Oil Company. The lease had a settled oil production of 61 barrels per day. Five individual five-spot patterns consisting of five input wells and 16 oil wells (four were old oil wells) were drilled in the undeveloped portion of the least. Nine input wells also were drilled along the lease boundaries. Oil production rose rapidly and by the end of the year was 300 barrels per day. Repressuring on other nearby leases was started by Sinclair Prairie, N. V. V. Franchot, Gulf, L. B. Jackson, Jr., Tide Water Associated Oil Company and Weber Oil Company. Whitehill Oil Corporation continued a repressuring project northwest of the central part of Glenn Pool.

Well Spacing

The well spacing of new oil and gas input wells is varied. Originally many of the leases in the pool were drilled on the basis of nine oil wells to 40 acres, while some were drilled only along the property lines. This type of drilling required eight wells to 40 acres, 14 to 80 acres, and 20 to 160 acres. Where a 160-acre lease had the line wells drilled and only four inside wells, it was possible for secondary recovery to drill 12 new oil wells and five gas input wells which formed four alternate "five-spot" patterns (see[A], Figure 2).

Where 160 acres had only the line wells drilled and no inside wells drilled, it was possible to use the large pattern (see[B], Figure 2), which required the drilling of eight new oil wells and five gas input wells. This type of pattern resulted in a direct drive to the oil wells over virtually all of the area.

Where 160 acres had been irregularly drilled (see[C], Figure 2), it was necessary to adopt a pattern to fit each case and avoid the plugging of existing lines.

Until some of these repressuring projects are depleted it will be impossible to determine which type of pattern is best for pressure control and yields greater ultimate recovery.

In the original drilling of the pool many wells only partially penetrated the sand and under secondary recovery many of the old wells have been deepened, and the results have been very profitable.

The present accepted practice in com-

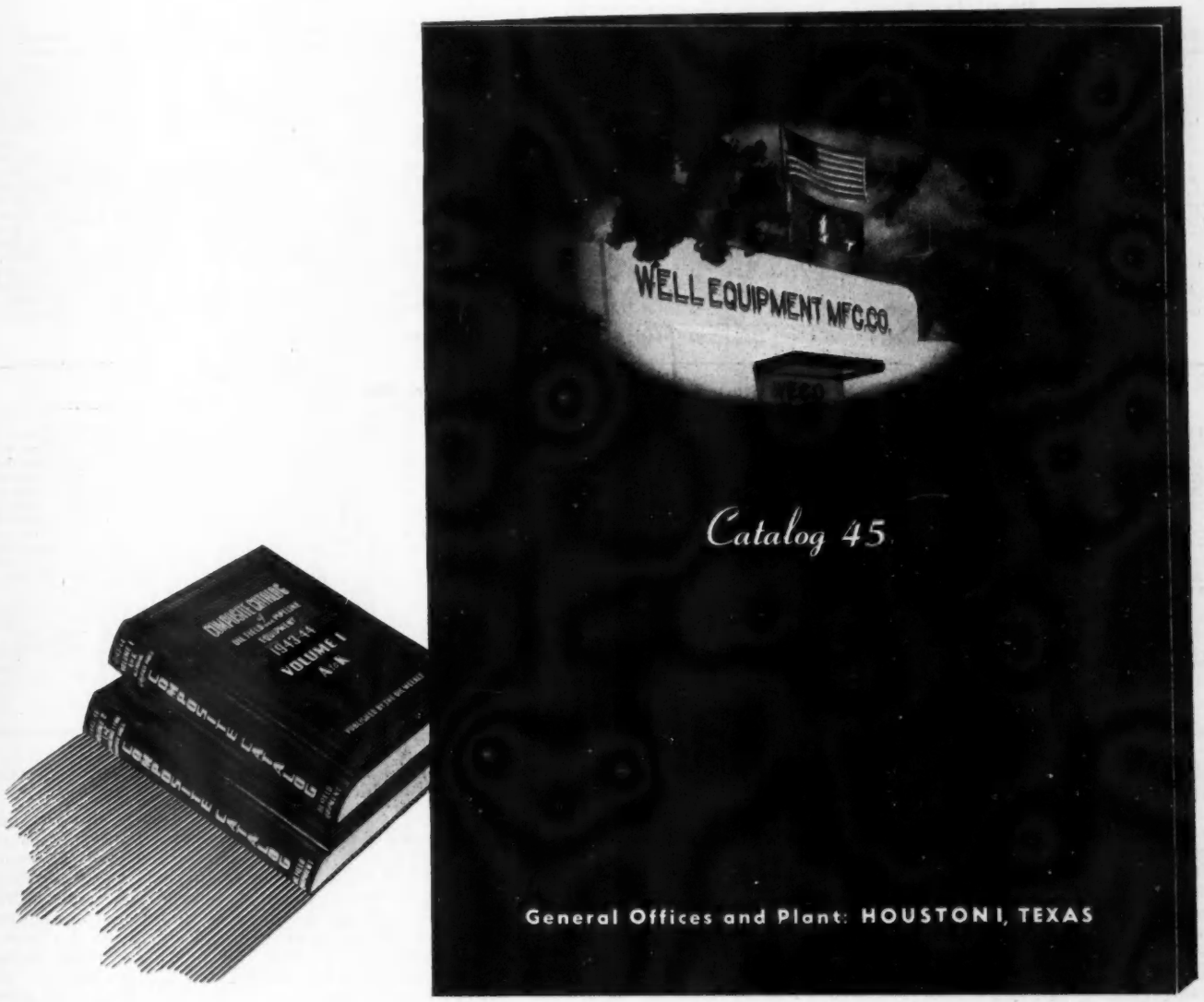

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TABLE 1

Glenn Pool Repressure Data — Projects Started from May, 1940 to April, 1943

PROJECT SYMBOL	Months Since 1st Input	Size of Project, Acres	Aver. Oil Prod. Bbls. Per Day: Before Re-press.	Mar., 1943	Nov., 1944	Peak Prod.	Increase	Aver. Input MCF/24: Mar., 1943	Nov., 1944	MCF/24 Injected Per B/D Oil Incr.: Mar., 1943	Nov., 1944	Produced G/O Ratio: Before R'pres	Mar., 1943	Nov., 1944	Number of Wells, Dec. 1 1944: Old	New	Total	Dr'led D'pr	Input	Remarks
(1)	56	160	61	250	261	329	268	325	342	1.7	1.3	1100	963	1570	23	12	35	21	12	90% Completed
(2)	41	160	46	319	399	432	386	250	240	.9	.6	1045	418	722	21	15	36	16	8½	90% Completed
(3)	44	160	36	97	193	220	184	80	180	1.2	.9	1470	1018	1112	18	16	34	9	8¾	90% Completed
(4)	33	160	52	87	177	181	129	75	145	2.1	.8	711	1172	960	21	12	33	4	8	80% Completed
(5)	43	40	11	21	33	33	12	20	51	2.0	1.5	1250	1975	1783	8	1	9	0	1¾	75% Completed
(6)	43	40	14	24	33	33	9	20	53	2.0	1.6	1250	1975	2155	9	1	10	0	2¼	75% Completed
(7)	43	80	22	48	49	52	30	90	125	3.0	2.6	2045	2835	2604	16	1	17	0	3¾	75% Completed
(8)	37	80	43	143	214	221	178	156	249	1.1	1.3	628	426	917	10	4	14	0	4½	Possibly Comp.
(9)	36	20	16	41	50	52	36	42	55	1.7	1.8	938	804	1237	4	¼	4¼	1	1½	Possibly Comp.
(10)	31	160	102	337	364	385	283	213	315	.9	1.2	686	548	965	27	3	30	10	8¼	90% Completed
(11)	36	160	60	116	139	151	91	101	195	1.8	2.5	833	784	1286	21	3	24	4	6	75% Completed
(12)	22	40	20	39	83	95	75	42	79	2.2	1.2	800	616	864	9	2	11	2	3	50% Completed
(13)	24	160	45	72	121	131	86	139	222	5.1	2.7	1290	2750	1452	24	5	29	1	6	50% Completed
(14)	24	80	52	59	136	149	97	55	144	7.9	1.6	692	830	718	12	1	13	0	4½	50% Completed
(15)	36	80	40	137	181	181	141	99	138	1.0	1.4	450	526	615	6	3¼	9¼	0	3¼	Possibly Comp.
(16)	56	120	25	45	50	57	31	75	50	3.8	3.8	2000	2780	2800	26	0	26	0	2	50% Completed
(17)	68	160	25	38	32	38	13	175	175	13.9	13.9	1200	3025	3025	15	0	15	0	5	No Extension
(18)	30	160	44	70	128	128	84	37	130	1.4	1.01	1885	1200	1270	33	0	33	0	5	60% Completed
Total		2000	744	1983	2643	2868	2133	1944	2858 Av.	2.8 Av.	2.38 Av.	1057 Av.	1104 Av.	1447	303	80	383	68	94	

Projects Started from April, 1943 to December, 1944

(19)	9	100	30	....	143	....	113	....	113	....	1.0	1398	....	916	16	7	23	0	5	75% Completed
(20)	9	80	35	....	58	....	23	....	29	....	1.2	654	....	808	16	5	21	0	2¼	75% Completed
(21)	8	20	21	....	39	....	18	....	56	....	2.2	571	....	897	6	0	6	0	2	100% Completed
(22)	7	40	7	....	12	....	5	....	43	....	6.1	2834	....	1635	7	0	7	0	1	50% Completed
(23)	12	40	75	....	138	....	63	....	78	....	1.2	322	....	462	7	1	8	0	2½	50% Completed
(24)	7	40	9	....	28	....	19	....	41	....	2.4	723	....	650	4	0	4	0	1	25% Completed
(25)	14	100	69	....	200	....	131	....	194	....	1.1	614	....	633	22	1	23	1	6½	65% Completed
(26)	8	80	29	....	63	....	34	....	119	....	3.1	1240	....	1487	19	1	20	1	4	25% Completed
(27)	18	80	49	....	173	....	124	....	143	....	1.1	580	....	660	14	3	17	3	4½	60% Completed
(28)	18	160	66	....	210	....	144	....	321	....	2.2	588	....	872	28	1	29	6	10	75% Completed
(29)	17	160	50	....	110	....	60	....	178	....	2.8	315	....	1118	20	2	22	5	5	50% Completed
(30)	15	70	102	....	232	....	130	....	104	....	.8	240	....	407	26	1	27	4	3½	50% Completed
(31)	14	80	64	....	167	....	103	....	107	....	1.1	485	....	483	18	2	20	0	3½	50% Completed
(32)	5	40	35	....	37	....	2	....	13	....	1.1	390	....	600	9	0	9	0	½	25% Completed
(33)	5	40	26	....	75	....	49	....	65	....	1.4	370	....	2666	9	1	10	0	2½	60% Completed
(34)	7	80	35	....	80	....	45	....	125	....	2.8	1200	....	1000	17	0	17	2	5	75% Completed
(35)	1	80	22	....	26	....	4	....	15	....	3.8	1000	....	1100	11	0	11	0	1	15% Completed
(36)	½	80	16	....	19	....	3	....	35	....	11.6	1000	....	1100	16	0	16	0	2	25% Completed
Total		1370	740	....	1810	....	1070	....	1779	....	2.6 Av.	818 Av.	....	968 Av.	265	25	290	22	62	

pleting new wells is to drill a 10-inch hole with a portable cable tool machine to an approximate depth of 275 feet, and a string of 8⅝-inch casing is set permanently to shut off a fresh water sand. Open hole drilling of 8-inch size is continued to the top of the Glenn sand, generally around 1450 feet. Seven-inch casing is set on top of the sand and a 6-inch hole drilled through the sand. The sand is then shot with 140 to 260 quarts of nitroglycerine and the hole cleaned out.

In drilling the input wells, the same procedure is followed to the top of the Glenn sand. A core of the top third of the sand is taken. Then 4, 5 or 6-inch casing is set and the remainder of the sand is cored. In coring either a cable tool core is taken with the portable drilling machine or a rotary coring machine is moved in for coring. Where the cable tool core barrel was used, trouble was encountered in coring the first new wells. The trouble was due to the high vacuum on the formation, which caused the barrel to stick when coring was finished, and many lengthy fishing jobs were required to recover the barrel. No trouble of this nature was encountered while coring the first new wells on a lease with the rotary coring machine or on the later wells using the cable tool machine.

In Glenn Pool, rotary coring is a little more expensive than cable tool coring. However, since a more detail core analysis can be made on the rotary core, the additional expense is justified.

In shooting the new wells either liquid or solidified nitroglycerine is used. The following table gives the results of shooting 40 new wells in the field using different kinds and size shots:

New Wells Drilled	16	24
Average Sand Thickness	153 Ft.	166 Ft.
Average Torpedo Shot	259 Qts.	140 Qts.
Kind of Shot	Solidified	Liquid
Average Barrels of Oil	11.0	11.0
Average Barrels of Water	5.6	1.1

Core analysis data from many cores taken in the pool show the Glenn sand is not uniform, thickness varying from 125 to 175 feet with numerous shale breaks and laminations.

In general, the sand consists of three pay zones whose thickness and physical properties changes from lease to lease and in many cases from well to well. Data presented in Table 2 are illustrative of this condition in the pool, and shows why it is essential that most of the new wells should be cored.

Repressuring is usually done in the pool with natural gas, though a few of the projects are served with air compressor plants. In one case a separate gas injection system was constructed from a compression type gasoline plant that had been in operation for many years with the purchase of additional gas for the system. One company, instead of building a large general plant to serve many leases, has installed smaller plants capable of serving only the lease on which the plant is located. The compression unit has two single-stage cylinders, one for air and one to gather and compress casing-head gas. The compressed air and gas are comingled in a discharge line to the input wells. Due to scarcity of gas the compression units are driven with the electric motors. This type of plant usually

TABLE 2

	Well 1	Well 2	Well 3	Well 4	Well 5
Upper Pay:					
Thickness in Feet	33	..	48	50	39
Average Perm. MD	51	No Sand	214	64	90
Average Poros.—Percent	14	..	21	18	18
Average Oil Sat.—Percent	22	..	16	33	25
Average Total Water—Percent	56	..	62	34	62
Middle Pay:					
Thickness in Feet	21	25	46	18	40
Average Perm. MD	289	231	164	29	142
Average Poros.—Percent	23	22	19	17	21
Average Oil Sat.—Percent	25	33	41	38	24
Average Total Water—Percent	33	48	46	49	56
Lower Pay:					
Thickness in Feet	35	45	59	50	52
Average Perm. MD	246	98	23	104	26
Average Poros.—Percent	20	20	18	20	19
Average Oil Sta.—Percent	31	32	38	30	11
Average Total Water—Percent	53	42	36	62	67

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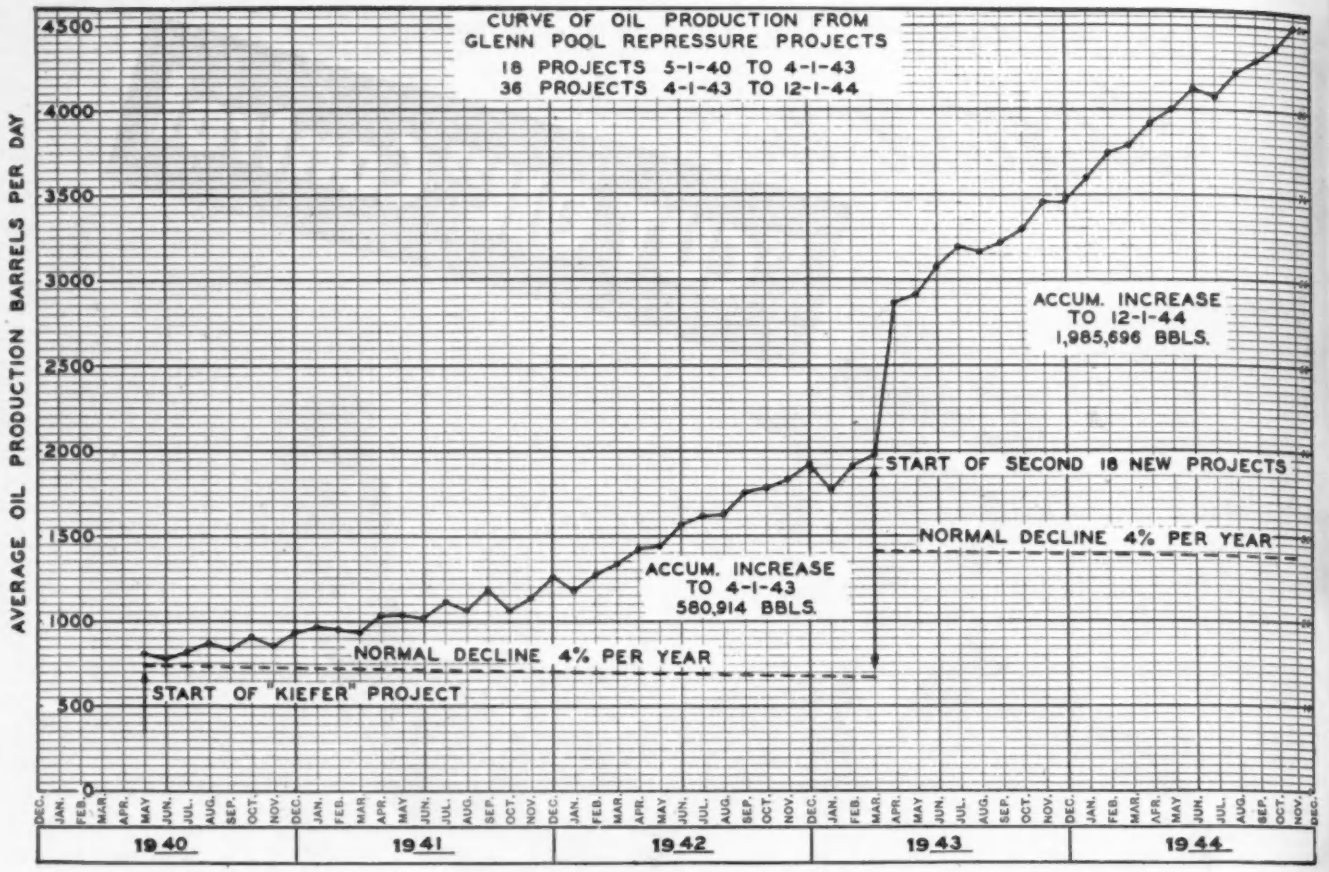

FIGURE 3

serves a 160-acre lease. The companies using this small-plant system have found it to be more economical than the large, general plant system.

Injection rates of 25 M cubic feet per 24 hours are used for the smaller size pattern where an input well serves territory of two to five acres. For the larger pattern where one input well serves a territory of ten to 30 acres, injection rates of 40 to 60 M cubic feet per 24 hours are used. In many cases the new input wells take gas under vacuum for some time, later it is necessary to inject the gas in the input wells at pressure from 5 to 50 pounds per square inch. However, one project in the North Extension requires injection pressure of 225 pounds per square inch.

In new input wells gas injection is started slowly from five to ten M cubic feet per 24 hours and then gradually increased in a few months to the desired rate. A recording orifice meter with a 7-day clock is set at each input well and operated during the first few months, until the desired injection rate becomes constant. The meter is then removed and weekly spot checks are made to control the input to the desired rate. Regulating the gas withdrawal from an individual oil well is accomplished by installing a cock in the gas gathering line from each oil well. The flow of gas through the cock or adjustable valve is determined once a week with a portable indicating orifice meter, and any adjustment to obtain the desired withdrawal can be made.

From April, 1943, to December 1, 1944, 29 oil wells and 29 input wells were drilled on the 18 repressuring projects that had been started prior to April, 1944 (see Table 1). This makes a total of 80 new oil wells and 94 input wells on these projects. The daily production has gone from 1983 barrels to 2643 barrels, an increase from the time repressuring was started in 1940 of 1899 barrels per day.

The M cubic feet per 24 hours gas injection has increased from 1994 to 2858, the average injection per barrel of oil decreased from 2.8 to 2.3, and the produced gas oil ratio increased from 1104 to 1447. Since the amount of input gas has increased 43.8 percent and the produced gas 4.4 percent indicates that the field engineers are doing a good job of controlling the gas drive, and no serious channeling effects are occurring.

Since April, 1943, The Texas Company, Thompson Oil & Gas Company, and Paragon Oil Company have started repressuring projects. Two of the operators that were repressuring prior to April 1, 1943, have started several new projects, making a total of 36 projects for the pool since repressuring was started in 1940. The total acreage effected by the new projects is 3370 acres making a total of 5370 acres being repressured in the pool on December 1, 1944. On the new projects 25 new oil wells and 62 input wells have been drilled. The gas injected is 1779. The M cubic feet per 24 hours injected for each barrel of oil increase is 2.6 and the gas oil ratio of these projects have gone from 818 before repressuring to 968. On December 1, 1944, the daily production for these projects before repressuring was 740 barrels and on December 1, 1944, was 1810 barrels, an increase of 1070 barrels per day.

Until secondary recovery was started at Glenn Pool, the estimated recovery was 4000 barrels per acre in the North Extension and 25,000 barrels per acre in Glenn Pool. From data from other secondary recovery projects of a similiar type of sand, it is believed that 5000 to 10,000 barrels per acre should be recovered from Glenn Pool under secondary recovery methods, and the pool should be fairly well depleted in the next ten years. The estimated accumulative increase in oil production due to secondary recovery on April 1, 1943, for the 18 older projects was 580,914 barrels, and on December 1, 1944, for the 36 projects was 1,985,696 barrels.

Since April, 1943, 14 of the older projects have reached their peak production and are now on the decline. However, the majority of these leases are not completely along their property lines, because the adjoining operators have not started secondary recovery. No doubt if the work could be completed on these leases at the present time, the production from them would soon go back to its peak, and in many cases exceed the peak. Whether this work will be done in the near future is a matter of conjecture. If it isn't done, the properties now using secondary recovery methods will be depleted to such an extent that the owners will be unable to justify the expense of contributing their proportionate share of the cost of these line wells, and the total ultimate recovery will be reduced.

ACKNOWLEDGEMENT

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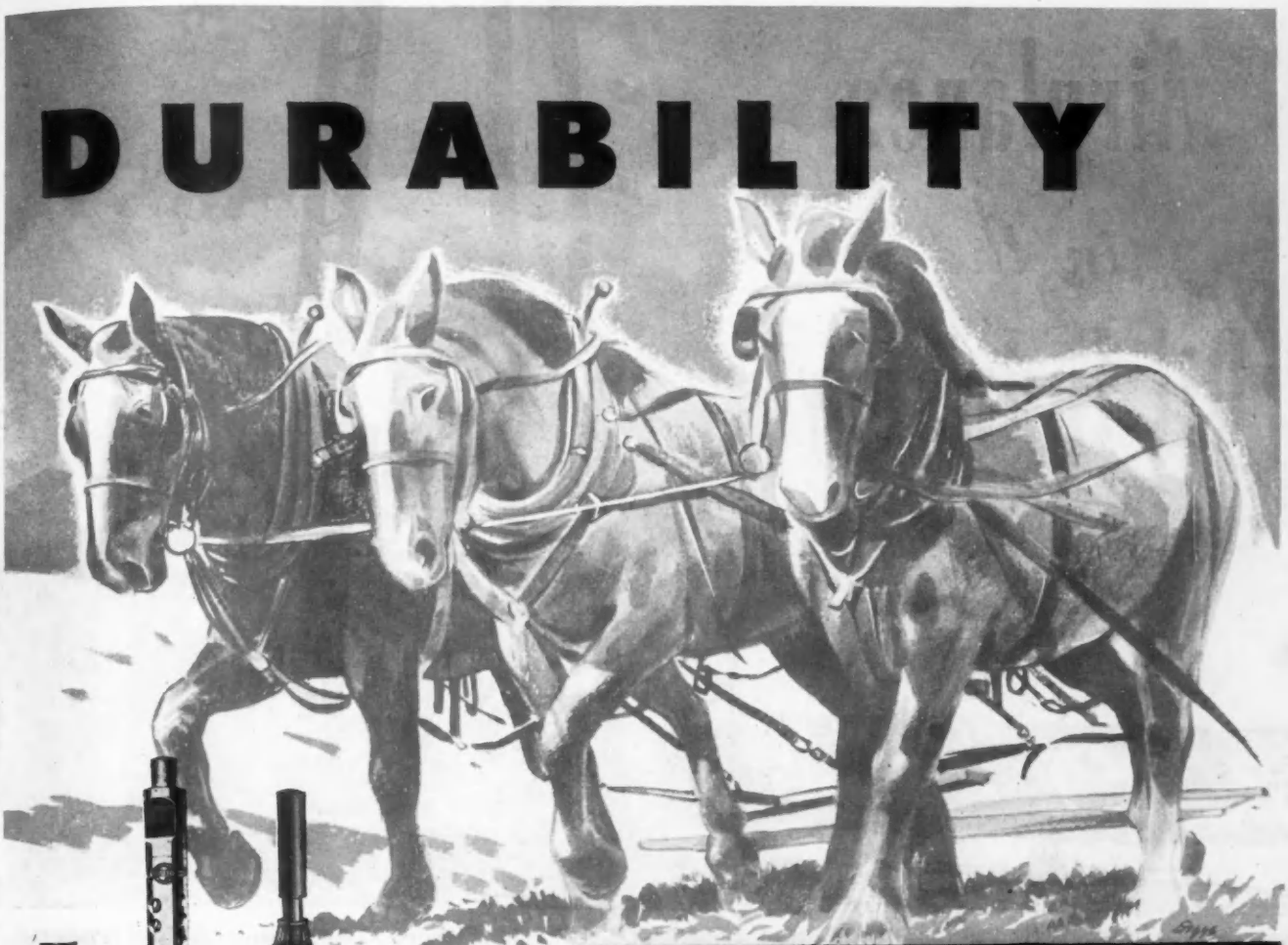

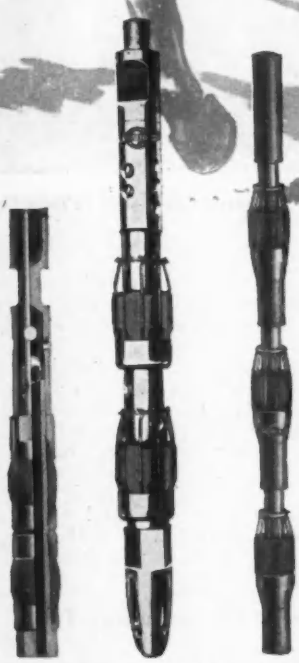

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Beech Aircraft Corporation,
Wichita, Kansas

THE oil industry has not yet taken full advantage of the potentialities of airplanes in connection with the oil business. It is true that many oil companies, drilling contractors, supply houses and individual oil operators have utilized their own airplanes in connection with their particular phase of the oil business. Some of the larger companies have used airplanes extensively in connection with marketing their product as well as in connection with the discovery and production of oil. However, considering the benefits that the oil industry can get from the use of aircraft, it is surprising that the use of airplanes has not been greater than it actually has been.

The most obvious use, of course, is the transportation of executive personnel, technical experts, oil scouts and owners from point to point, where interests are widely scattered. The airplane offers extremely rapid and comfortable transportation without dependence upon railway or airline schedules and without worrying about making connections at transfer points. Ordinarily, landings can be made in the near vicinity of whatever operations are being carried on, and the crews on location or organizations at the destination can furnish necessary ground transportation from the place at which the airplane lands.

Quick Delivery of Parts

Supply houses can use airplanes for the purpose of rushing necessary repair or replacement parts to wherever they may be needed, and those who furnish technical services can send their technical experts directly to the job with a minimum of delay. Drilling contractors can send a representative to inspect the site of a new well and determine from first-hand information what problems will have to be overcome before drilling operations can commence.

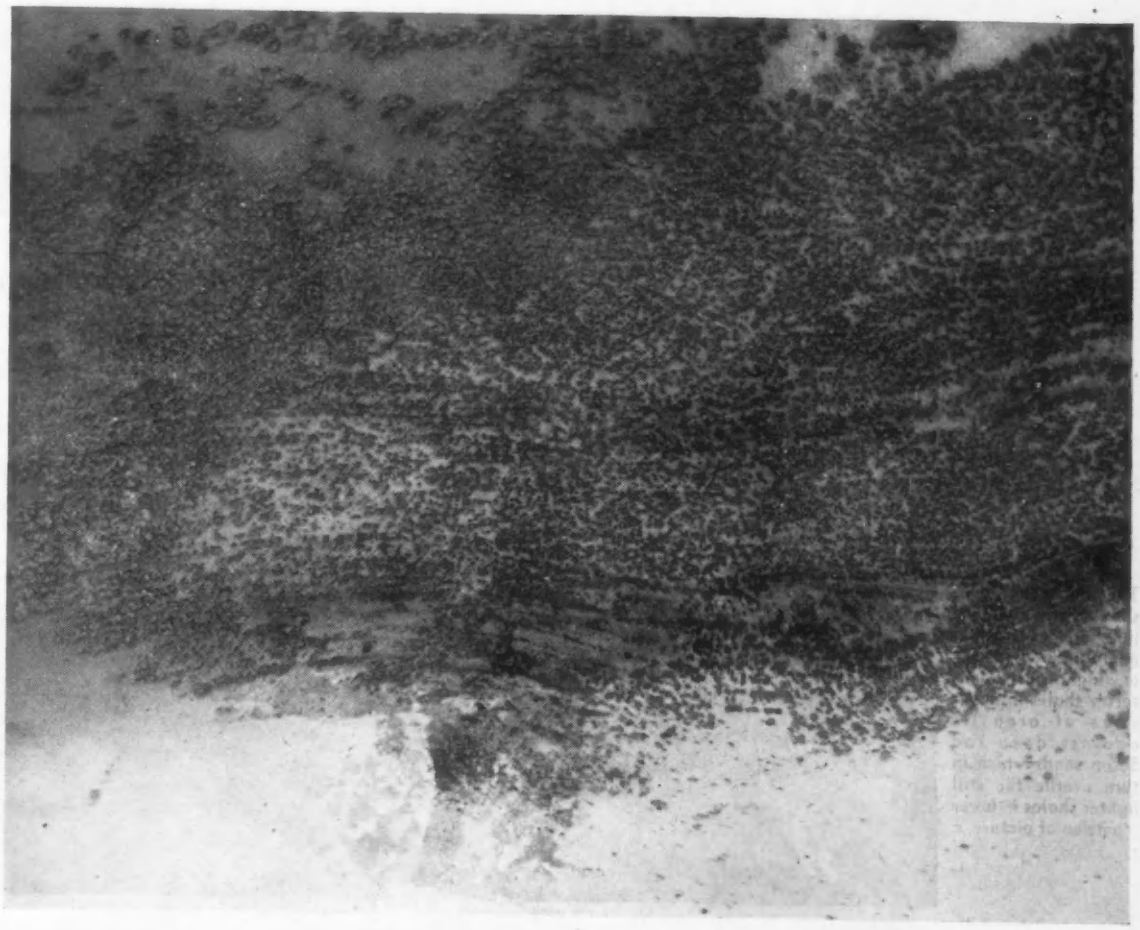
Many drilling operations are located in places where there are no formal airports, but a slow-landing airplane can utilize improvised landing fields even alongside of an oil well. In the western part of the United States and in some regions in foreign countries, the oil country is free of trees and there are many areas suitable for making landings in the vicinity of drilling activities. Such operations can be conducted by a competent pilot without any more hazard than would be incurred on a normal airport.

It, of course, is obvious that if no airport exists in the vicinity of a well location or oil play, the surface transportation facilities ordinarily will be below par also. Bad railroad service and inadequate highways may cause still more delay in surface travel than is usual. If the airplane pilot can find a suitable improvised landing area in the vicinity of the location, all of this delay can be eliminated.

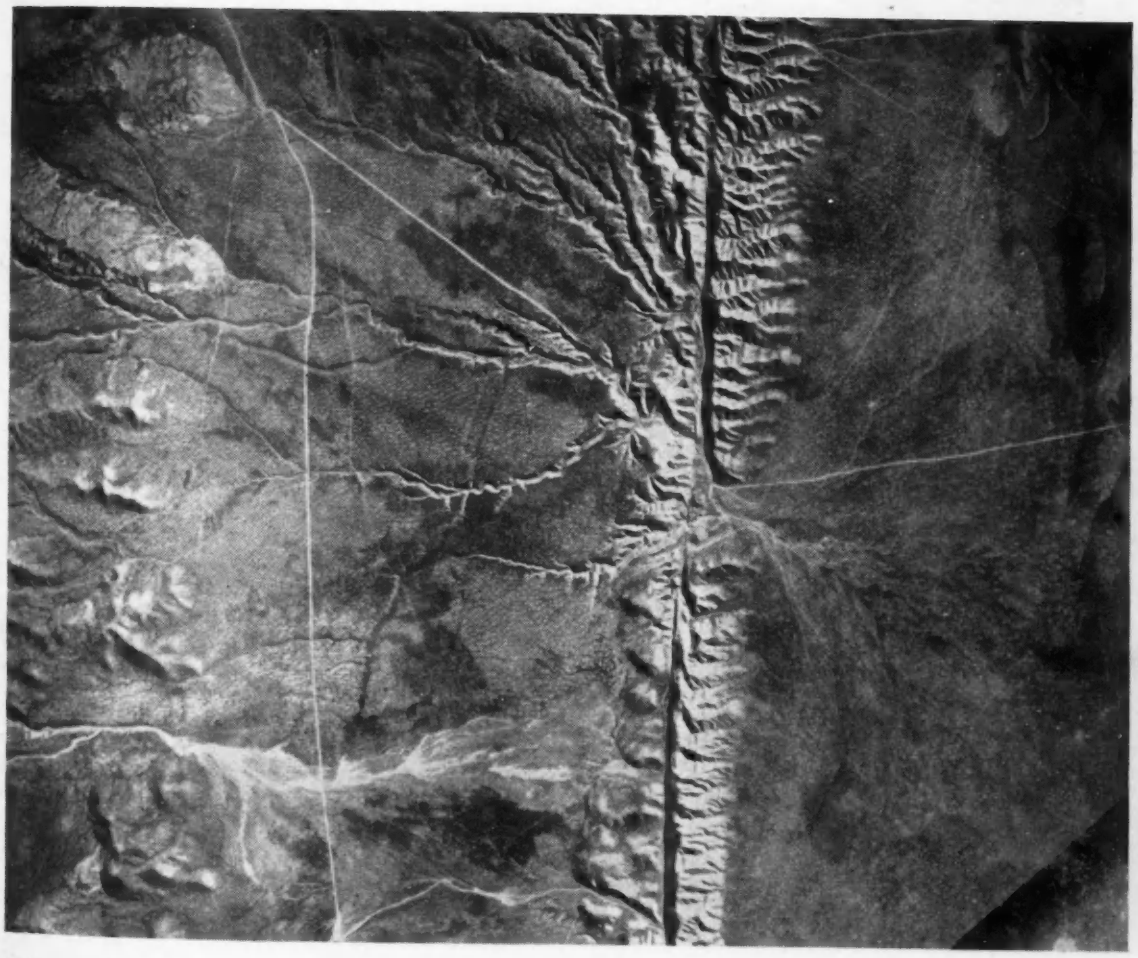
Saving the Executive's Time

When considering the cost of transportation in company-owned airplanes, the value of the time saving must be included. A highly-paid executive or technical expert must necessarily be worth at least twice his salary to the company which employs him. If he has to spend a considerable part of his normally productive hours in unproductive and tiring travel by means of inadequate or primitive means, his employer not only has lost the value of his services during the travel period, but

The aicphotos which appear on pages 41, 42, and 44, which follow are all by Fairchild Aerial Surveys, Los Angeles, California, and are used through their courtesy. They give vivid instances of the valuable assistance which the oil industry can get from aerial photography-mapping. The concluding portion of the Gaty article may be found on page 46.



Kelp beds just off shore along South California coast show definite indication of geological structures. This photograph is definite proof that vegetation can disclose hidden geological structures.



This photo of a section of the famed San Andreas fault gives conclusive proof of the direction of movement as well as the tremendous pressure as indicated by the uplifted areas on both sides of the fault.

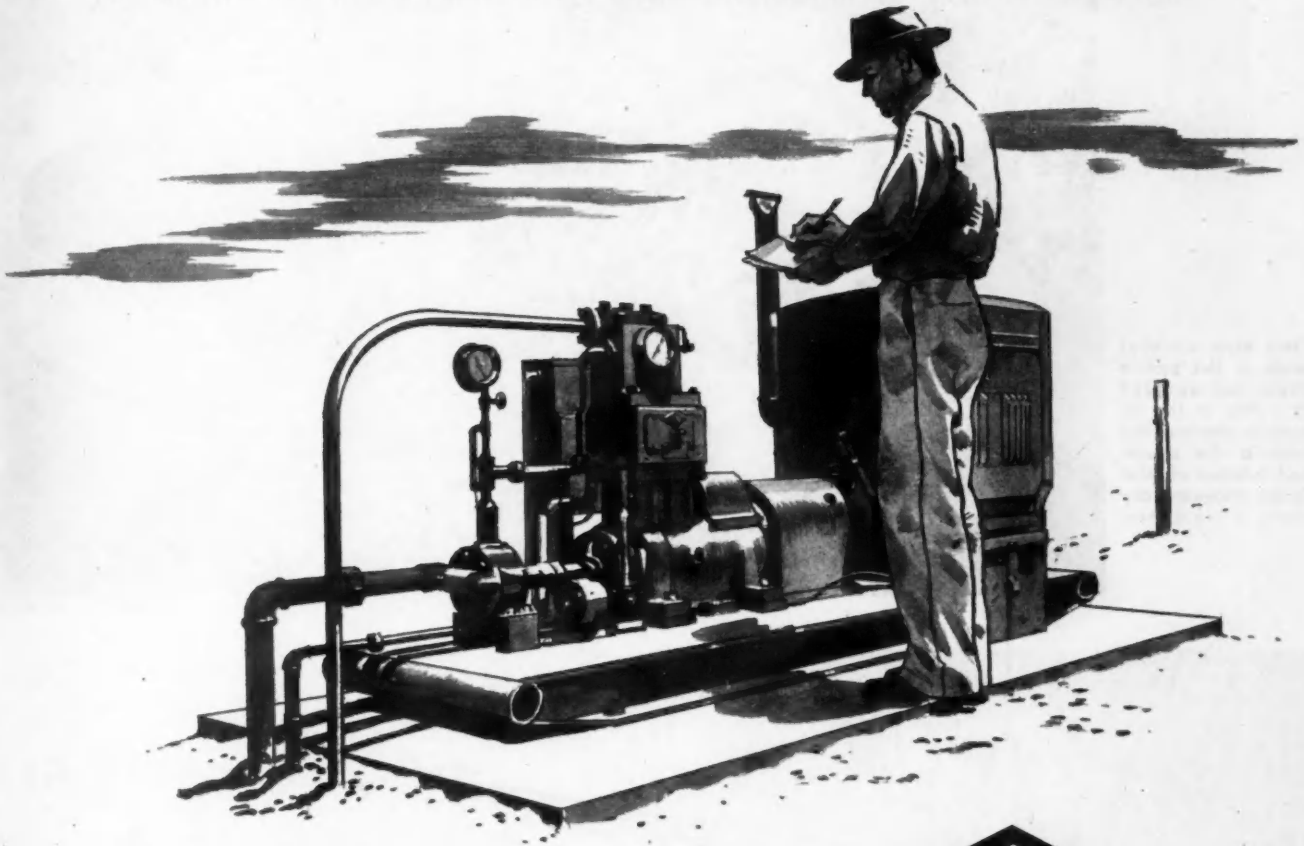
The monoclinal beds shown here would be in sharp contrast if photographed in color. Light buff Monterrey shales in upper edge of area lie against deep red Sespe sands which in turn overlie the still lighter shales in lower portion of picture.

The six aerial photos in this series are by Fairchild Aerial Surveys, Los Angeles, California

This porphry dike running through central portion of picture of an area in Western Nevada would be very conspicuous in a color picture. Notice how upper end of dike has been displaced by minor fault at right.

Right

FOR SINGLE UNIT PUMPING TOO



MORE and more single well operators are finding that they, too, can have the efficiency, flexibility and portability of Kobe "fluid power" pumping—not only for the same cost but in almost every case at a considerable saving. This applies both on original outlay and operating costs.

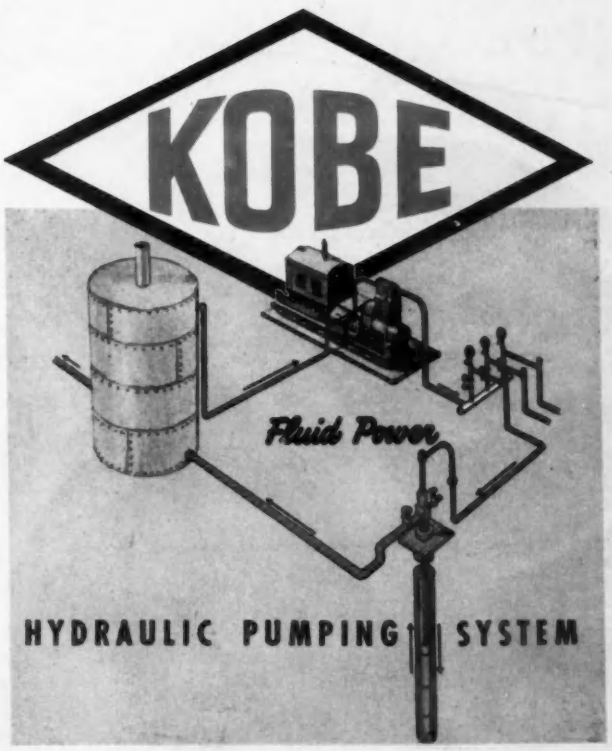
EFFICIENCY. The Kobe hydraulic power principle that directly supplies energy for pumping on both strokes at the bottom of the well where the work is to be done is the most efficient oil pumping system yet devised. Whether Kobe power is harnessed to one well or ten, this is provably true.

FLEXIBILITY. Rough leases or crooked wells do not affect Kobe. "Fluid Power" goes anywhere a pipe can be run and to any depth, while large fluctuations in power requirements are easily met.

PORTABILITY. Because of its compactness and light weight, Kobe is more readily movable than any other oil pumping equipment now in use. Should pumping conditions change and the need arise to substitute one Kobe unit for another of smaller or larger capacity, the exchange can be made in a few hours with regular lease trucks.

Any one of these advantages would be sufficient reason for preferring Kobe. Taken together, they make it the only logical choice if you want savings with satisfaction.

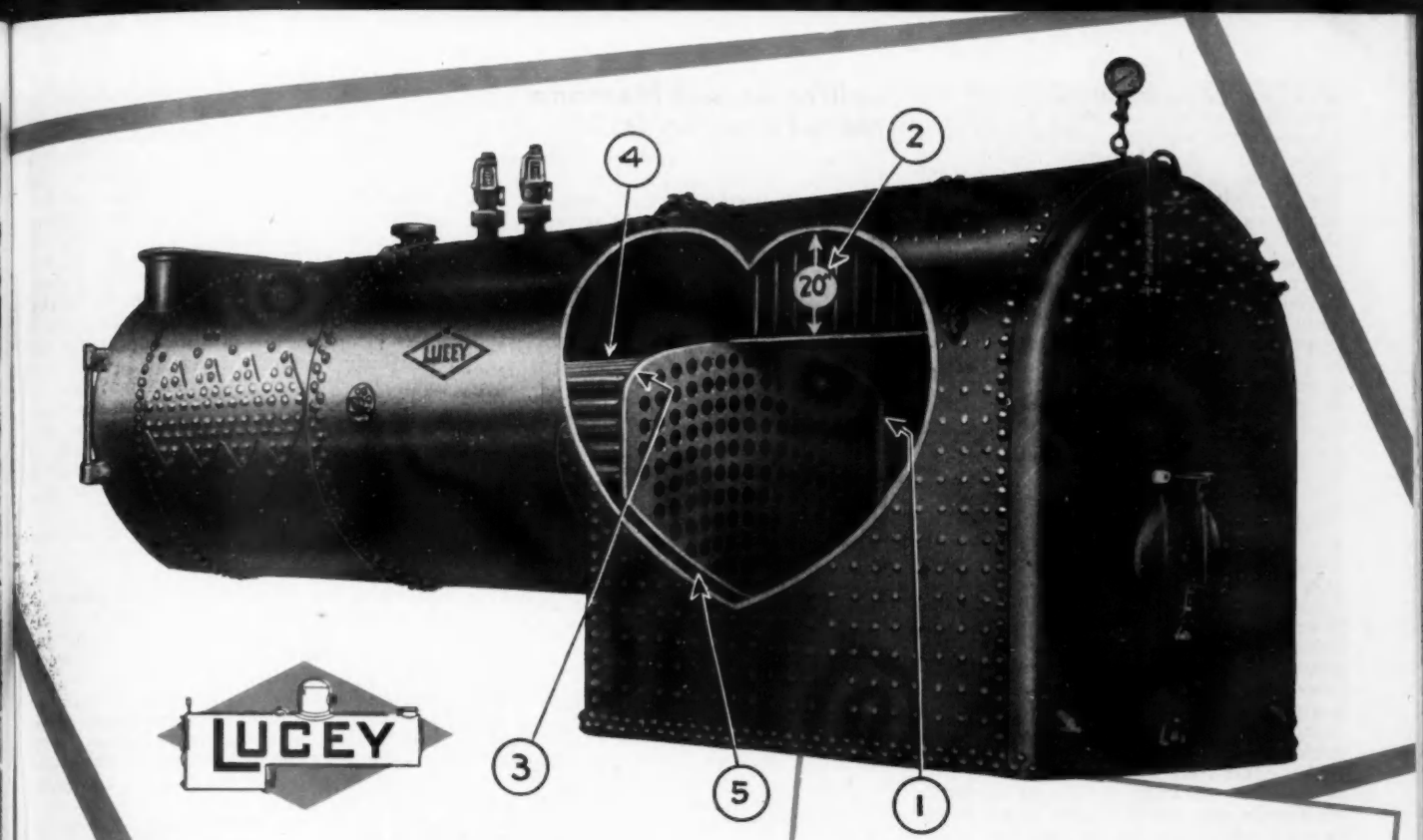
No matter what your single well problem may be, your nearest Kobe representative has the solution. Call him today.



PUMP THE MODERN WAY • USE KOBE

Only after careful study of this picture could this ancient lava flow in the Sierras be distinguished from a dry stream bed. Addition of color would eliminate any doubt at one glance.

These ox bows and scrols along this ancient stream are purely physiographic features which might at first be mistaken for bedding in a black and white picture.



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4. Short tubes (seamless) in vertical rows. Effective heating surface.
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also may lose additional productive time due to the necessity for energy recuperation and rest, following such a trip. Also it should be remembered that an executive or technical expert is paid for his ability to analyze a situation and render a correct decision for action. After a long and tiring trip, without proper sleep or proper food, the ability to render a correct analysis and proper decision may be depreciated considerably. In such a case, the employer is not getting what he is paying for in the way of ability. A single incorrect decision made under such circumstances might cost the employer more than the cost of operation of a fleet of airplanes for an entire year.

Enhances "Psychic Income"

There is an additional factor among the intangibles that is becoming quite important. Present income tax rates take away so much of the salary of highly-paid men that some other means than salary alone must be utilized to obtain and hold the services of high-grade executives. What is called "psychic income" has become an important factor. This means the general surroundings of a job, the associates with whom an executive works, the living conditions which are possible, the degree and duration of separation from his family, the climate, and many other factors which are impossible to weigh and compare accurately, but which all add up in one way or another to influence an executive as to the relative desirability or undesirability of a certain job. By providing company-owned airplanes for transportation, some of these factors can be improved, thus creating a better "psychic income" for the executives and technical experts of the company.

This factor has been recognized for many years by the Army and Navy. The pay rates of admirals and generals are almost stationary for the various grades. After an officer attains the rank of rear admiral or brigadier general, he may advance higher in rank, but his pay does not advance in any way proportionally to his increased responsibility and importance. He does receive considerably more "psychic income," however. He is assigned better automobiles and bigger, faster airplanes for his personal use and disposition, his quarters are more elaborate and in every way his life is made more comfortable. Not the least of his "psychic income," of course, is the added authority and responsibility of his position, and the prestige which he has earned. Commercial companies may advisedly consider the possibility of taking similar steps, in view of present almost confiscatory upper-bracket income tax rates.

Aerial Photography

Aerial photography and aerial contour mapping have been employed by some of the larger companies in remote regions as well as within the limits of the United States. Many people do not know that quite accurate contour maps can be prepared merely from aerial photographs, providing that a number of widely scattered and identifiable ground points in the area are located in elevation as well as in latitude and longitude, by ground survey means, for the purpose of providing control in the preparation of the map. There are several competent aerial photographic ogranizations in the United States prepared to make such maps at the request of oil companies, and it would be good judgment to employ one of these expert organizations rather than for an oil company itself to enter this highly specialized and technical field of endeavor. However, an oil company or operator can easily make arrangements to train a staff photographer to take ordinary aerial photographs for the purpose of first-examination of an area or for the purpose of estimating the best approach to an area which is intended for drilling.

An interesting added development for areas where the rock formations lie exposed, such as in the western part of the United States, is the identification of formations by means of color photography. One of the most prominent paleontologists experimented several years ago with color photography of large areas in our western states for the purpose of discovering fossilized remains of selected extinct large reptiles and animals. He stated that this method enabled him to discover, during a few weeks of flying, enough favorable locations to keep him busy the rest of his life in actual excavation work. The desired fossils were generally found in a certain "red bed" which was identified readily in the color photographs. The experiment was completely successful. It therefore seems reasonable that color photography combined with vertical aerial mapping may provide a new method of discovering favorable geological structures by actually contouring the exposed outcrops of the key formations under examination. The color would identify the formation under examination and help to prevent errors caused by uncertainty of identification. Such enormous areas can be covered in such a short time by this method that the actual ground work could be narrowed to certain selected localities within a very short period of time, and further detailed efforts concentrated at such points, by means of the usual ground survey methods.

The advantages of aircraft are even more important in primitive areas such as the jungle countries and in other countries where no ground transportation of a formal type exists, as in the Arctic. Airplanes can fly in an hour or two to a location which takes weeks by ordinary ground means of transportation. A missionary in Borneo, before the war, operated a mission in the interior of the island. In ninety minutes his Beechcraft seaplane would take him between two points that required more than six weeks of ground transportation of the most unpleasant type. He landed the airplane in a narrow twisting river located between high mountain peaks, and maintained it at his advance base.

Skis enable aircraft to operate in the northern regions during the winter and can be quickly attached in place of wheels. One resourceful pilot used to operate his airplane on skis from the mud flats of a river in the lowlands of Alaska, and fly it to camps located high in the mountains where the snow was still deep.

Aerial mapping can be conducted over areas that are hundreds of miles from the nearest airport or landing place. Good radio communication equipment is necessary to permit coordination of efforts, by the transmission of weather information and other messages, between the air base, the advance party on the ground, and the airplane which does the mapping. The major aerial surveying companies have performed many such assignments in the most isolated and primitive parts of the world, especially during the present war.

It might be considered that aerial mapping would offer little of value in connection with countries which were covered with dense jungle. However, some of the ancient roads of Yucatan were clearly discernible in aerial photographs, due to the fact that the trees which grow over these roads have a different appearance from the trees growing alongside the roads. Changes in topography can readily be discerned, even over densely forested country. The ability of the airplane to map the rivers and streams in such country also is of great benefit to anyone who wishes to survey the country on foot.

An isolated instance of the use of a single aerial photograph was the case of one taken for a South American government. The first airplane that ever entered the jungle area in question was a seaplane on floats. It landed alongside a remote ranch placed on the banks of a river located east of the Andes Mountains. The rancher was well equipped with all the conveniences of civilization which could be operated electrically, as he had freighted over the Andes Mountains on muleback a small diesel electric plant and all the necessary fixtures and equipment, and was operating the diesel plant from an oil seepage located behind his ranch house. These seepages were so prevalent along this river that the photographer for the government took one picture showing the confluence of this river with another. The oil film on the surface of the first river was plainly evident at the point where the two rivers joined, and this photograph served to convince the government to undertake exploration of this area for the purpose of locating the cources of oil.

After the war, the oil industry probably will take greater advantage of the benefits that they can derive from the use of airplanes than in the past.

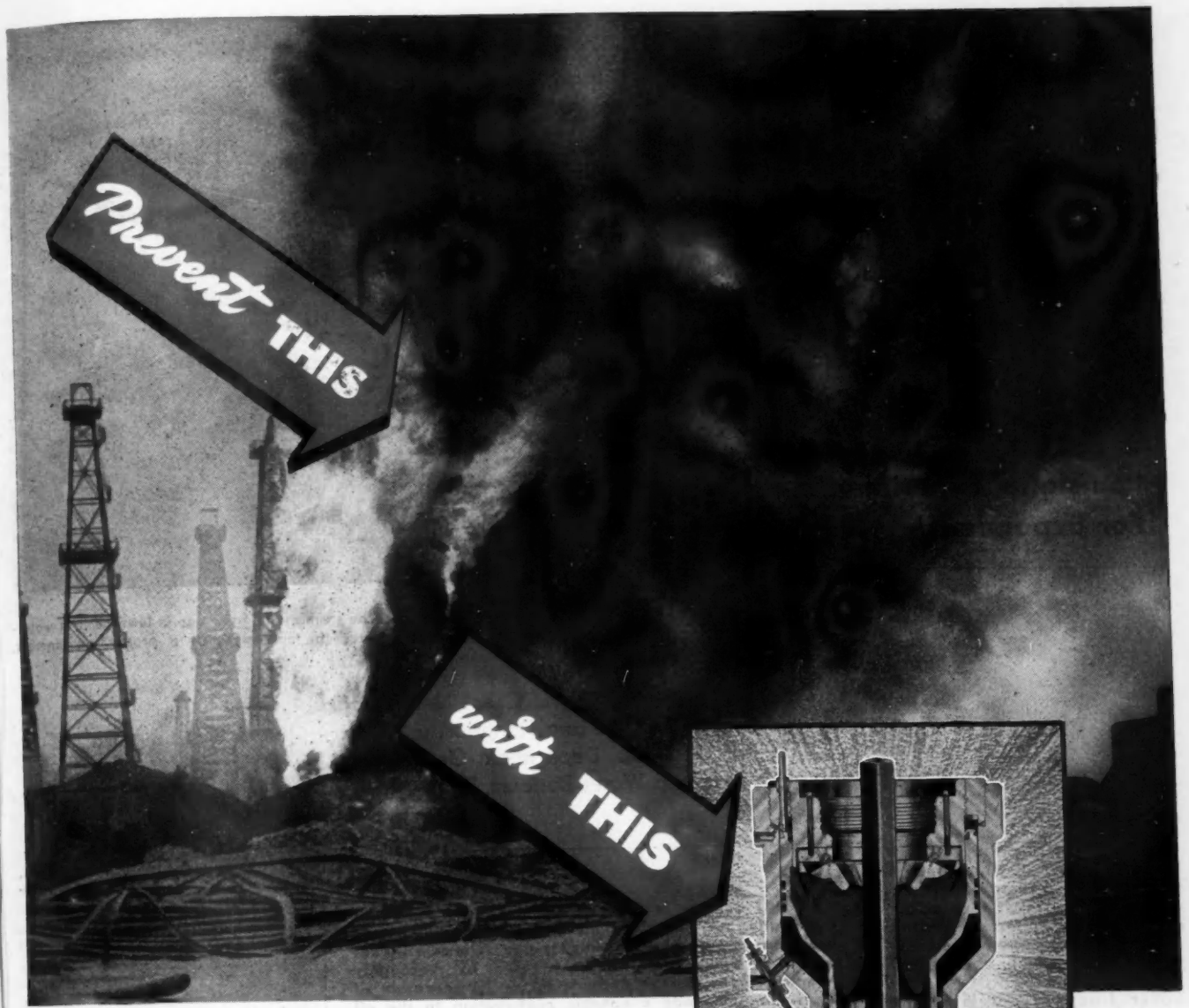
When commercial airplanes again are available, the oil industry will have the benefit of new methods of use, new equipment, and new facilities such as airports and landing areas, which will render the airplane a most effective aid to increased profit.

California and Montana Maps Issued by USGS

A series of five maps showing the distribution of formations in the Santa Maria oil district of California and the first geologic map of Montana giving formations of the entire state in detail were announced last week by United States Geological Survey.

The California maps, available as a set from both the survey in Washington and its Los Angeles office at a cost of $3, are based on 10-minute airplane-photographic mosaics. The district covered is one of the principal sources of heavy oil in California.

The map of Montana brings up to date data which have been compiled over a period of some 15 years and is designed to fill a long-felt need of petroleum geologists for an adequate general map for use in planning geologic studies and the development of exploration programs. Copies may be had at a cost of 75 cents from Washington and the field offices in Billings, Montana; Casper, Wyoming, and Tulsa.



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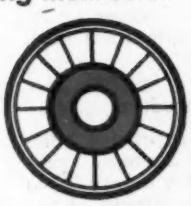
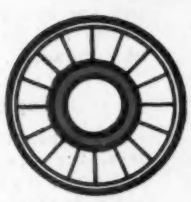

DRILL PIPE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Shrimp Don't Mind Dynamite

Louisiana Experiments Pave Way For Expanded Marine Oil Research

The experiment begins. The shrimp and fish cage is lowered in a watertight "cradle" that assures the specimens of a proper environment.

By JAMES NELSON GAWONLOCH, Chief Biologist
Division of Wildlife and Fisheries, and
JOHN E. McDOUGALL, Department Geophysicist,
Division of Oysters and Water Bottoms, State of Louisiana

WHAT damage is done to marine life when seismic exploration for oil and gas has to be done in submerged areas has been a question largely unanswered until recently. In trying to settle the problem by thoroughly scientific methods, the Department of Conservation of Louisiana has made a notable contribution to the oil industry. Through the results obtained, the search for oil in the Louisiana coastal country can be speeded up without any conflict with the industry that depends upon fish, oysters or shrimp.

The account of these experiments as vividly told in the *Louisiana Conservationist*, is reproduced herewith.

WHEN two leading industries come into possible conflict in the course of their expansion, decisions must rest, not upon emotional or opportunist considerations but upon technical data. Clearly such a problem was one presented to Commissioner Joseph L. McHugh in recent requests made to him that he permit the use of 800-pound dynamite charges instead of a previously allowable 50-pound charges in seismographic exploration for oil in the waters of the Gulf of Mexico off the coast of Louisiana.

Satisfactory indeed were the results that, clear cut and repeatable, demonstrated without doubt that speed-up in the oil search, essential in hastening the war's end, can proceed, accelerated four-fold, wihtout damaging one iota the shrimp industry that brings bread and butter to so many of our Louisiana citizens. The completion of these studies marks another step in the regulation of all seismograph operations in Louisiana. Four years ago, James N. McConnell, director of the division of oysters and water bottoms, established a systematic supervision of seismograph exploration on land and water throughout Louisiana to protect the natural resources of the state. The Department of Conservation provides an individual inspector for each survey conducted in "restricted areas." The cost of this supervision is borne by the oil company concerned while the Department of Conservation alone appoints and controls the inspectors. Permission from the Commissioner of Conservation must be obtained before any company can begin a seismic survey and the commissioner designates when, where and how such exploration shall be conducted.

Exploration Procedure

Oil exploration is an expensive business, the operations of a single crew costing as high as $40,000 a month. Two methods of shock wave technique in the search for oil concealed beneath sea and earth are used, reflection and refraction. Reflection, involving the use of small dynamite charges, produces shock waves which travel downward until they reach a formation which reflects them back to the surface. Their course, plotted by skilled technicians, reveals the nature of the earth's structure in terms interpretable by geophysicists and geologists. Reflection shots, covering relatively short distances, are used for obtaining details in exploration. Refraction involves the use of heavier charges, whose explosion sets in motion waves that travel long distances in the formations before returning to the surface, speeding up four times or more the search for knowledge of oil structures. Refraction shooting requires charges up to 800 pounds and sometimes higher to cover this longer distance. The mere mention of the use of shots of this size in our coastal waters, particularly when viewed in the light of anti-submarine warfare, and the bombing of enemy cities, naturally profoundly alarms anyone interested in game or commercial fishing, oysters or shrimp.

Oil men felt that since shrimp trawlers annually destroy (and this is unavoidable) millions of pounds of "trash" fish they, the oil men, should not be jumped on because they happen to kill a few pounds of fish per shot.

Near "Jumbo" Shrimp Source

This is definitely not the question. The fact is that this oil exploration in the Gulf of Mexico, using these heavy charges, was to begin in the very area that forms the heart of our "jumbo" shrimp industry. The shrimp industry which ranks (last normal figures) sixth in volume, fourth in value of all fishery industries of the United States and Alaska is one to which Louisiana contributes 70 percent. Still furthermore, the "jumbo" shrimp fishery in this area (a fishery that resulted from a single scientific discovery of the cooperative shrimp investigations of the Department of Conservation of Louisiana and the federal government) contributes annually 20 million pounds of the 120 mil-

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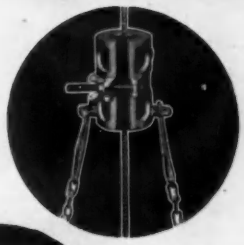
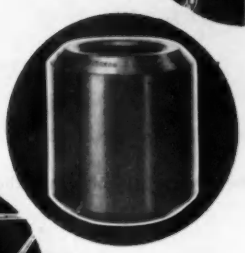
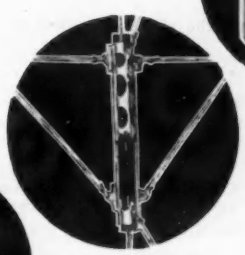


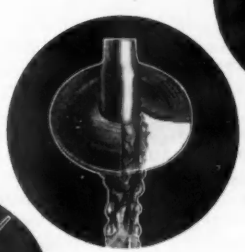
WIRE LINE WIPER



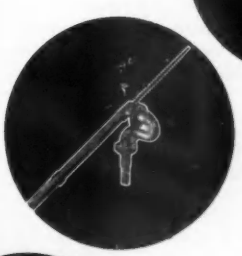
STABILIZER



6-SECTION WIRE LINE GUIDE

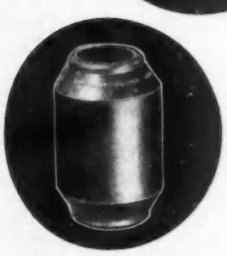


PIPE WIPER



MUD GUN

"Best Bet Yet"



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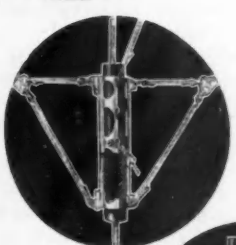

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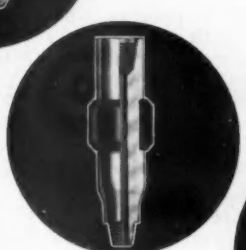
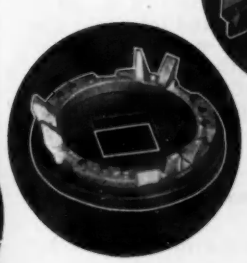
TRAVELING BLOCK BUMPER

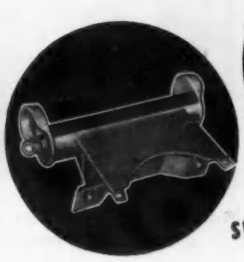


KELLY SUB PROTECTOR



KELLY WIPER

DEAD LINE STABILIZER



SWIVEL BAIL BUMPER

Placing the fish and shrimp cage for the dynamite shot. Note the shot point flag at extreme left and the cage at extreme right.

lion pounds of shrimp annually produced by Louisiana. No one, any time, anywhere had the faintest idea what dynamite shock waves do to shrimp.

Firing off a heavy dynamite charge in the Gulf of Mexico, without technical, experimental procedures means exactly nothing. Dead fish float. Dead shrimp sink. It might be quite possible to kill every shrimp for miles around and know nothing about it.

It becomes necessary to plan and execute critical biological experiments. These require that selected animals (in our experiments, shrimp [Penaeus setiferus] fish, croakers, and oysters) be held under observation in carefully constructed cages, arranged at spaced intervals over the shot area (intervals were 50, 100, 150, 200, 300 and 400 feet) examined immediately before and immediately after the explosion, and examined subsequently at two intervals, 24 and 48 hours after the shot. We can then learn what happens to individual shrimp, fish and oysters, whose condition before the shock has been demonstrated to be normal and the condition of these identical groups of animals subsequently, accurately observed.

Such critical experiments the authors planned and executed.

Experiment Apparatus

Full recognition is justly here given to Magnolia Petroleum Company and to its contract crew, McCollum Exploration Company, who contributed the use of a five-boat fleet and their crews and technical staff to these important operations. Additionally, they constructed special geophones (complicated electrical instruments that register and photgraph in a continuous record divisible into one hundredth-second intervals, the progress, rising force and duration of the shock wave resulting from the dynamite blast). These geophones were placed with the experimental cages so that a synchronous scientific record of the physical characteristics of the shock wave is available for correlation with biological results obtained in the experimental cages.

Results of these experiments may be summarized briefly. They were surprising.

The definite experiments included one 200-pound shot and two 800-pound shots, each of which used separate series of cages containing completely different sets of experimental shrimp, fish and oysters. A control box with similar specimens was located beyond the range of any shock effects.

The 800-pound dynamite charges failed to injure in any way shrimp exposed to this shot at the distance of only 50 feet. Furthermore, these shrimp still remained normal six days after the explosion. Yet the shock shook an oyster-lugger ten miles away.

The fish (croakers) were evidently unharmed at a distance of 200 feet and in one instance two croakers survived at a distance of 150 feet. All croakers nearer than 150 feet to the 800-pound shot were killed. No differential mortality could be found among the oysters but for various biological reasons the senior author considers that more experimental work is necessary before a satisfactorily definite decision can be reached. Accordingly, it was decided to permit no use of heavier than 50-pound charges in any area where it was conceivable that the shock waves might affect oyster beds.

Water is hurled 300 feet into the air when the 800-pound dynamite charge goes off.

Seeming Paradox

Astonishing indeed, to the layman, is the conclusion that as far as shrimp and fish are concerned the 800-pound charge, although sixteen times as great, produces at a radial distance of 200 feet, biological effects that, for practical purposes, are similar to those produced by a 50-pound charge. This seeming paradox is, however, in strict accord with the fundamental, established physical theory involved. The concentrated release of energy that occurs in the explosion of a dynamite charge is chiefly absorbed in friction among the water molecules and its force, which is the measure of its power to do biological damage, declines with amazing speed as the shock wave travels outward.

The amplitude of this wave was accurately recorded by the geophones attached to the experimental boxes and the course of decrease in shock scientifically plotted.

One additional important aspect of the use of higher dynamite charges is that it will involve the use of only about one fourth the number of explosions and, since each charge effects damage within but a narrow radius (200 feet), irrespective of whether it be 50 pounds or 800 pounds, the actual sharply localized damage done by the total of shots will thus be reduced profoundly.

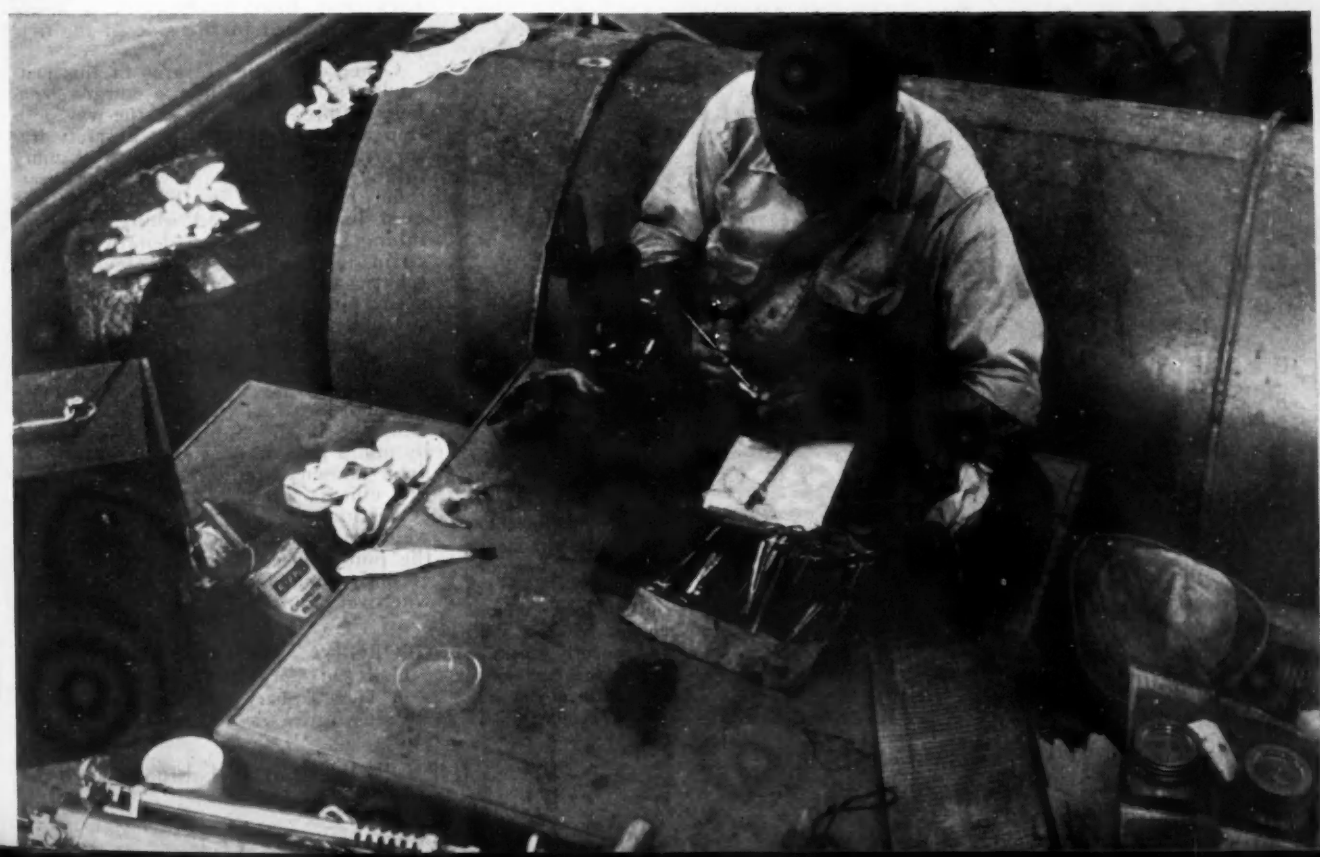
Why then does 800 pounds of dynamite which is more than twice the charge used in an "ashcan" to smash a Nazi submarine at 50 feet fail to injure in any way a shrimp at exactly the same distance? The answer is to be found chiefly in the size differential of shrimp and submarines in relation to the wave lengths of the shock. The shock wave speeding at approximately

The specimens are removed, very much alive, from the cage after the dynamite shot.

4940 feet per second in water has opportunity to equalize the stresses on both sides of a small object like a shrimp vastly more rapidly than it can when presented with the massive silhouette of a submarine. The blow that buckles the submarine plates is the sum of this combination of vastly high pressure and large area.

The further biological and physical interpretation of these experiments will be published in both geophysical and biological technical journals. The problems their interpretation presents in view of the knowledge that we have gained of the effects of high explosive artillery shell-fire and of "block buster" bombing, together with researches in anti-submarine warfare all fall into a most interesting, coherent pattern.

The writers propose to conduct additional experiments designed to provide correlatable data covering the practical biological effects of the explosion of small dynamite charges placed in earth near small bodies of water and directly in small bodies of water. It is well known that under such circumstances charges of even five pounds are at times highly destructive. This superficial contradiction (when contrasted with the offshore 800-pound experiments) is perfectly understandable in scientific terms but it is the wish of the writers, nevertheless, to fulfill by the performance of carefully planned experiments, the full pattern of this contrast.



Gowanloch examining specimens.

Fold-Away Mud Line Is Feature Of Portable Pump Unit

Suction lines on small trailer, unitized and broken down, will speed up the work of moving portable rigs

GREATLY speeding up the work of moving portable drilling rigs from one location to another, is the method used by one company in unitizing and breaking down the mud pump suction lines on its small trailer-mounted pump unit. Near the intake end of the pump unit skid base, the rigid part of the mud suction line was cut and weld flanges installed. While the flanges were bolted together, a shop-made hinge was fashioned atop the two flange halves, welding it to the line with heavy fillets provided on either side to lend extra strength.

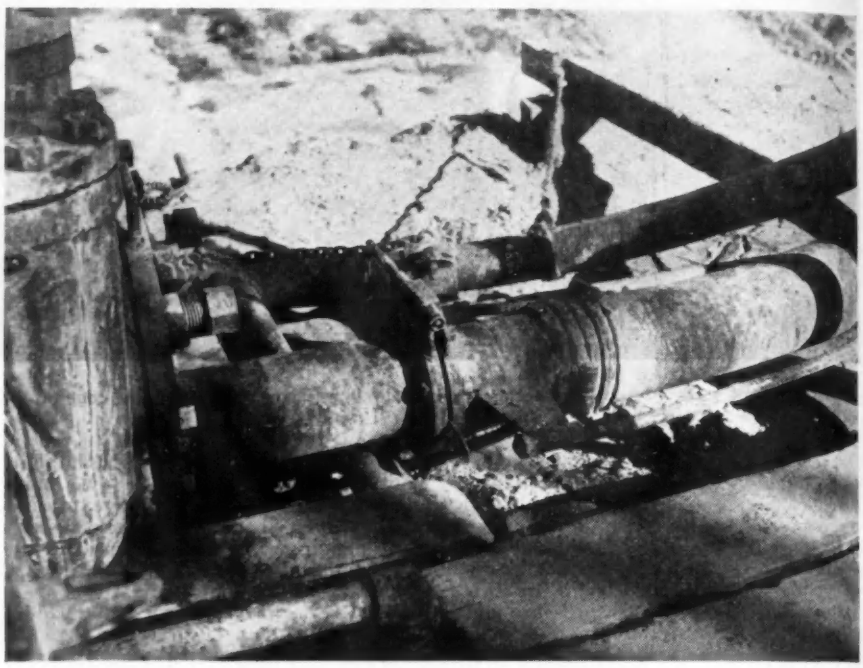
On moving the unit to a new location the flange is unbolted in normal manner but the usual time-consuming task of breaking down and stowing the hose sections and fittings is elimiated. Instead, the assembly from the hinged section out is raised to any convenient height with the aid of a small winch that is permanently mounted on the back of the unit.

This small hoist is also shop made, consisting of a single upright section of pipe and braced by two smaller ones extending at an angle back to the other end of the base. Quarter-inch wire line is run through two small blocks providing ample leverage when hand-wound over the small reel. The latter, mounted with a height-adjusting pin on the back side of the upright pole, has a torch-cut ratchet and cog on the crank end of the spool which securely locks the line in any desired position.

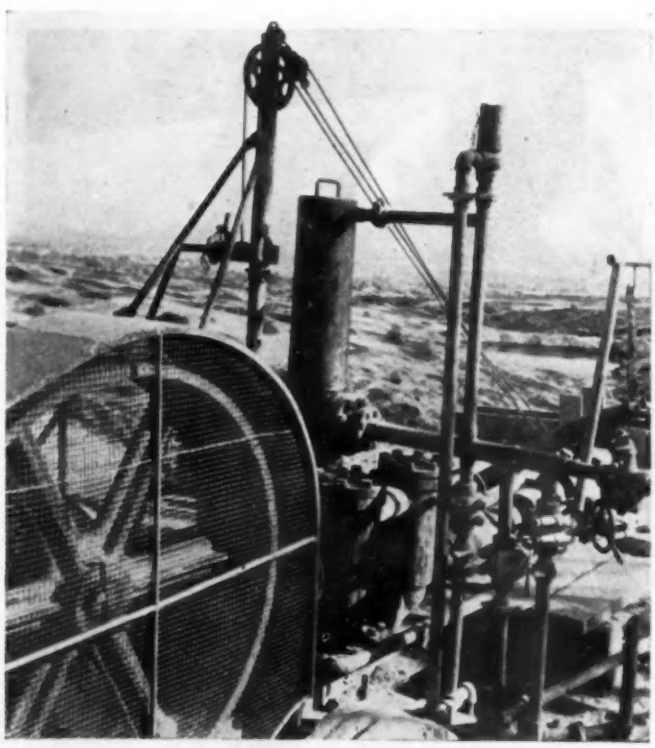
To maintain a degree of rigidity along the length of the short section of flexible hose between the pump intake and the 90-degree elbow extending down into the mud pit, two lengths of steel rod were affixed to either side of the hose, each rod being bolted to a heavy bracket welded to the side of the rigid part of the line.

Other desirable features of this unitized assembly include a surge chamber mounted in an out-of-the-way position atop the pump; also a safety feature that eliminates possibility of injury to any of the workmen when the shear-relief type valve in the high-pressure mud line "blows." A short length of tubing, attached to a length of light chain, is slipped over the body of the relief valve to confine pieces of the shear pin.

Much space was conserved on the unit by mounting as many lines as possible in a vertical position instead of having to lay them along the ground at each location. To reduce damaging vibration in the light mud lines caused by pump pulsations, each of the vertical lines shown mounted on the side of the unit is provided with a tie-down consisting of a short but heavy lug welded to one of the lateral members of the pump base. Hammer-type and single-bolt unions were used throughout wherever possible.



Below—The usual flanged fitting at the pump end of the hose is converted by welding on ears for one in which the tops of the flanges interlock to take a hinge pin, while sufficient travel lengthwise is permitted to enable the joint to be pulled tight on the gasket with the usual flange bolts. Steel through-bolts stiffen the horizontal run of the hose, and prevent breaking when lifting the elbow and drop leg of the line.



Hand-powered winch mounted on post above mud pump to enable one end of mud suction hose to be raised into clear and supported for transportation. The winch used ¼-inch flexible wire line, and through multiplication of leverage with blocks, requires but one man to handle hole for shifting jobs. Pins and aligned holes in shaft and supporting housing enable the load to be blocked at any desired height.

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GEORGE A. SHUMAN, 54, employe of Gulf Oil Corporation since 1919, died in Tulsa January 31. He was a native of Pennsylvania.

Sharp Decline in January Completions Indicates Decelerated Drilling Rate

Drilling activity declined sharply during January. While the curtailment was seasonal at least to some extent, it substantiated prevailing concern as to the prospects of drilling sufficient wells during the current year. Figures compiled on wells drilling at the beginning of February also appeared inauspicious, having indicated continued development at decelerated rate.

In the five weeks ended February 3, 1945, there were 2125 well completions in the United States, an average of 425 per week. That was a sharp decrease from the 499 weekly of December and compared with 539 per week in September, 1944, most active months since the cut-back in drilling after Pearl Harbor. The 425 completions per week in January were, however, nearly 19 percent above the 358 weekly of January a year ago. A year's drilling at the same rate as in January this year would afford 22,000 completions, but the goal set up for 1945 by the Petroleum Administration for War is 27,000. It is customary for drilling to increase in the summer and fall, and such seasonal increase must occur this year if the government agency objective is reached.

While drilling was nearly 19 percent greater in January than a year earlier for the United States as a whole, changes by districts and states vary widely, with activity in PAW district 3 showing greater than average increase, while some states show declines. Texas development is up 46 percent over a year ago, in reflection of especially large gains in North, West and upper Gulf Coast districts. Other exceptional increases include those of 52 percent for Oklahoma, 98 percent for Louisiana, 46 percent for New Mexico, a 6-fold gain in Mississippi, a 50 percent increase in Illinois, 41 percent for Michigan. Arkansas shows a 27 percent increase, and California a 35 percent gain. Completions ran lower in January than a year previously in Montana and Wyoming, Indiana, Kentucky, Ohio and Kansas.

At the beginning of February, 1945, there were 3835 wells drilling or rigging up in the United States, a decrease from 4180 a month earlier. States which were responsible for the decline included Arkansas, Illinois, Kansas, Kentucky, Louisiana, New Mexico, New York, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia. Texas districts showing decreases in rigs in operation included North and West Texas and the Panhandle.

The 3835 rigs active on February 1 this year represented an increase of 843 operations or 28 percent over data a year previously. This increase was not accompanied by a proportionate increase in wells completed, for as previously stated, completions for January were only about 19 percent above the year previously. This comparison reflects relatively deeper drilling now, and the greater concentration of development in the areas of deeper pays, as in the Southwest. It also reflects continued subnormal efficiency in drilling, due to deficiency of experienced manpower, scarcity of materials and equipment, and difficulty of securing replacement parts.

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HERBERT LEE PRATT, 73, retired chairman of the board of Socony-Vacuum Oil Company, died February 3 in New York City. A former president of the old Standard Oil Company of New York and chairman of its board, Pratt became head of Socony-Vacuum when it was formed through a merger in 1931. He retired from office in 1935.

U. S. Completions in January 18.6 Percent Above Year Ago

(Figures compiled from weekly reports of editorial staff men, with following exceptions: Arkansas data from Arkansas Oil and Gas Commission; Illinois from Illinois Geological Survey except for January; Indiana from Indiana Division of Geology; Missouri from Missouri Geological Survey; Allegany; New York, Bradford and Kane-Clarendon, Pennsylvania, from The Producer's Monthly; Tennessee from Tennessee Division of Geology.)

State or District	MONTHLY COMPLETIONS: January, 1945 — Details for January, 1945 — New Wells — Oil*	Gas	Dry	[4]Others	Old Wells Deepened	Total Completions — Jan., [1]1945	Dec., [2]1944	Jan., [3]1944	Percent Change from Year Ago in Weekly Average	Total Footage January, 1945	RIGS IN OPERATION — Details for February 1, 1945 — Drilling	Rigs Up	Shut Down	Total: Drilling and Rigging Up — Feb. 1, 1945	Jan. 1, 1945	Feb. 1, 1944
Alabama	.....	...	3	...	...	3	3	.....	.....	15,470	1	...	3	1	4	2
Arizona	.....	...	...	...	...	.....	.....	.....	.....	.....	.....	...	...	.....	.....	3
Arkansas	7	1	5	...	1	14	23	11	+ 27.3	30,705	16	3	11	19	26	26
California	165	2	26	...	4	197	154	146	+ 34.9	828,033	322	36	37	358	357	340
Colorado	4	...	1	...	...	5	5	2	+150.0	27,846	15	...	1	15	15	7
Florida	.....	...	1	...	...	1	4	.....	.....	8,708	5	...	...	5	3	1
Georgia	.....	...	1	...	...	1	.....	.....	.....	4,626	1	1	...	2	1	.....
Illinois	113	...	70	...	15	198	202	132	+ 50.0	507,738	108	72	22	180	217	187
Indiana	7	1	19	...	...	27	24	33	— 18.2	49,501	23	15	14	238	36	47
Iowa	.....	...	1	...	...	1	.....	1	.....	1,250	1	...	...	1	1	.....
Kansas	44	13	61	...	9	127	124	182	— 30.2	389,427	219	14	5	233	278	241
Kentucky	20	7	31	...	...	58	71	59	— 1.7	120,176	32	21	6	53	91	67
Louisiana	49	10	29	...	1	89	55	45	+ 97.8	729,936	162	12	7	174	194	97
North Louisiana	11	7	21	...	...	39	19	10	+290.0	171,013	50	7	3	57	68	34
South Louisiana	38	3	8	...	1	50	36	35	+ 42.9	558,923	112	5	4	117	126	63
Maryland	.....	...	...	...	...	.....	.....	.....	.....	.....	.....	...	...	.....	1	.....
Michigan	35	2	39	...	...	76	53	54	+ 40.7	221,036	114	11	31	125	116	82
Mississippi	19	1	15	...	...	35	18	6	+483.3	238,078	53	5	5	58	55	14
Missouri	1	...	5	...	...	6	21	2	+200.0	16,808	4	5	9	9	6	6
Montana	9	...	4	...	...	13	21	26	— 50.0	37,921	37	4	7	41	38	66
Nebraska	.....	...	...	...	...	.....	3	3	.....	.....	1	...	1	1	2	1
New Mexico	30	...	20	...	1	51	37	35	+ 45.7	179,004	96	7	10	103	113	88
New York	40	...	...	22	...	62	86	97	+ 36.1	83,330	56	8	17	64	101	99
Ohio	14	26	24	...	...	64	89	78	— 17.9	165,345	158	22	39	180	190	181
Oklahoma	122	8	64	3	5	202	175	133	+ 51.9	858,217	461	31	19	492	559	372
Pennsylvania	96	16	2	82	4	200	213	211	— 5.2	340,618	196	27	52	223	267	238
South Dakota	.....	...	...	...	...	.....	.....	.....	.....	.....	.....	...	...	.....	.....	1
Tennessee	.....	...	...	...	...	.....	.....	2	.....	.....	.....	...	...	.....	2	3
Texas	341	57	211	10	7	626	517	428	+ 46.3	2,769,526	1,230	67	101	1,297	1,351	742
East Texas Border	.....	1	1	...	...	2	4	.....	.....	13,406	19	3	4	22	20	8
Rest of E. Texas	10	...	11	...	1	22	22	25	— 12.0	137,223	51	3	3	54	55	44
North Texas	90	3	70	10	...	173	118	89	+ 94.4	409,352	135	5	8	140	176	131
West Central	9	1	13	...	...	23	24	32	— 28.1	77,524	77	5	32	82	88	46
West Texas	116	...	39	...	3	158	144	112	+ 41.1	788,212	456	21	31	477	485	306
Panhandle	15	37	4	...	2	58	33	14	+314.3	175,882	157	8	7	165	196	39
Upper Coast	36	4	16	...	1	57	52	38	+ 71.1	431,016	106	12	7	118	118	59
Lower Coast	48	10	31	...	...	89	77	78	+ 14.1	570,648	148	8	6	156	146	73
Southwest	14	1	24	...	...	39	35	36	+ 8.3	138,535	60	1	2	61	47	27
South Central	3	...	2	...	...	5	8	4	+ 25.0	27,728	21	1	1	22	20	9
Utah	.....	...	...	...	...	.....	.....	.....	.....	.....	.....	...	...	.....	.....	1
West Virginia	4	45	7	...	4	60	78	92	— 34.8	144,061	72	12	18	84	109	34
Wyoming	7	....	2	...	...	9	19	14	— 35.7	43,423	65	14	20	79	47	46
Total U. S.	1,127	189	641	117	51	2,125	1,995	1,792	+ 18.6	7,810,783	3,448	387	435	3,835	4,180	2,992

* Includes distillate wells. [1] Wells completed in 5 weeks, or 35 days, ended February 3, 1945. [2] Wells completed in 5 weeks, or 35 days ended January 29, 1944. [3] Wells completed in 4 weeks, or 28 days, ended December 30, 1944. [4] Water input, gas injection, and salt water disposal wells.

Tax Review

A Regular Feature of THE OIL WEEKLY
By WILLIAM O. TAYLOR*

This column is designed to review legislation, judicial decisions, administrative rulings and policies, and topics which are of current interest to the oil industry, from a tax viewpoint. It will be published as frequently as new developments seem to require.

Cost of Worthless Mineral Rights As Income Tax Deductions

BETWEEN now and March 15, many taxpayers will have to decide which of their leases and royalties were determined to be worthless during 1944. The cost of such leases may be deducted on the 1944 tax return. In support of such a deduction, the taxpayer must be able to prove not only that the mineral interest is worthless but also that it was first demonstrated to be worthless during that year. Worthlessness is a question of fact, and each claimed deduction will stand or fall on its own fact background.

The government's position has changed from time to time. The most recent published ruling is *G.C.M. 3890*, in which it is stated that "a careful prospect of the entire field which demonstrates that the same is barren of oil in commercial quantities may establish—absolute worthlessness—." This ruling revoked an earlier one to the effect that the taxpayer claiming the deduction must show that he had relinquished title. In several cases tried in recent years, the government's position has been that a property may be proved worthless only by a dry hole drilled to the bottom of the sedimentary formations or as deep as modern drilling equipment will go, a theory which has found no favor at all with the courts. Moreover, the decisions do not indicate that *absolute* worthlessness, as suggested by *G.C.M. 3890*, is the proper criterion.

For example, it was said in *Chapparal Oil Company*, 43 B.T.A. 457, that "practical worthlessness" must be proved by the taxpayer and that he need not show a "complete and total loss beyond the possibility of any recoupment." Again, in *C. C. Harmon*, 1 T. C. 40, the tax court held that worthlessness may be due to "the *mere improbability* that oil or gas in profitable quantities will ever be available." In the latter case, it was said that the mere possibility that there might be production from a deeper, untested sand at some time in the future does not necessarily mean that a property has not been proved worthless for tax purposes. This is a far less rigid test than the *absolute worthlessness* which *G.C.M. 3890* seems to require. There is a reference in the *Harmon* case, also, to "loss of value in the ordinary channels of trade," but a taxpayer need not necessarily prove that he tried unsuccessfully to sell the property, although such proof would be strong evidence of worthlessness if the offering price were low enough.

Dry Hole Claim

Usually, the drilling of a dry hole will be the principal fact on which a claim of worthlessness is based. The well need not have been drilled on the property which is claimed to have been condemned by it, and in some instances a well a mile or more away seems to have been considered sufficient proof. On the other hand, in *L. S. Randolph*, a memorandum decision by the tax court, one of the reasons for denying the claim was the fact that the dry hole was more than two miles away. In one case no well had been drilled on the property, but the taxpayer proved his claim by showing that correlation of geological data from other wells in the area, some of which were producers, indicated that the sand underlying his property lay structurally below the water line in the field. No case has been decided thus far in which the taxpayer's claim was based solely on a shooting picture, but there is no reason why a claim might not be thus established if the results were definitely negative. If delay rentals are paid after the dry hole is drilled or after the occurrence of whatever event the taxpayer is relying on, the claim or worthlessness is likely to be denied, even though the taxpayer is a royalty owner and had nothing to do with the decision as to whether further rental payments should be made.

In most cases, taxpayers will be required to submit proof in the form of expert opinion, i.e. that of geologists or geophysicists, that the property had been demonstrated to be worthless. In one case, it was said that the facts must be such as to convince "an experienced oil man" that the property is worthless, but in another it was said that they should be such as to convince "a prudent and *informed* business man." Expert testimony has been introduced in most of the cases thus far where the question has been successfully litigated.

Royalties Sold at Auction

In *Metropolitan Royalty Corporation*, a memorandum decision by the board of tax appeals, the taxpayer realized the difficulty of proving worthlessness and, in order to establish his loss in the current year, arranged to have the royalties sold at auction for a nominal amount. The government contended the loss was from sale of a capital asset and was deductible only to the extent of $2000 under the law then in effect. The taxpayer's position, in which he was sustained by the board, was that the royalties were worthless prior to sale and that he was entitled to deduct their entire cost. The case has been appealed. If the board's decision is affirmed, it will not necessarily follow that sales for nominal amounts should be made as a matter of policy in order to establish worthlessness, for factual circumstances will frequently be such that a claim of worthlessness can be established without sale and the taxpayer will still have his royalties, for whatever they may be worth. But if the appellate court holds that the loss is realized on the sale rather than by reason of prior worthlessness, taxpayers contemplating sales will have to consider whether, under their particular circumstances, the losses may be treated as capital losses and subject to the statutory limitations.

Losses due to worthlessness should be claimed in the earliest year in which the facts appear to justify it. If the loss is not taken until a subsequent year, the government may disallow the deduction on the ground that worthlessness occurred in a prior year. The government's determination carries with it a presumption of correctness and places on the taxpayer the burden of proving the lease or royalty was not worthless in a prior year, a fact which is sometime difficult to prove.

Taxpayers claiming a loss due to worthless mineral rights should file Form 927 with their return. This form provides for showing various facts about the property which have a bearing on its worthlessness and also includes an agreement that if the government allows the deduction and the mineral interest subsequently becomes productive, the taxpayer will claim no depletion until the amount to which he would otherwise have been entitled is equal to the amount of the loss which he was allowed to deduct.

☆ ☆ ☆

Production Is at Cost of Reserves, Says Holman

Eugene Holman, president of Standard Oil Company of New Jersey, declared at a press conference in Tulsa that the price of crude oil should be increased and pointed out that most of the oil being produced in this country is at the cost of future reserves, and from flush areas opened up years ago when costs were not as high as now.

Holman endorsed the stand taken by the IPAA, which is waging a fight to get a crude oil price increase and said he believed that somehow prices would be advanced soon. As to who would absorb the price increase, Holman said that while it might be practical for some operating companies to do so, varying costs of manufacturing would make it prohibitive for most refineries.

Touching briefly on the international oil situation, Holman said this knotty problem is being cleared up with industry and government representatives arriving harmoniously at a proper understanding on the controversial Anglo-American oil agreement.

Well Phillips Was Forced To Drill Proves Best

A Phillips Petroleum Company well in the Oklahoma City pool which the company was forced to drill in 1932 to satisfy royalty obligations, has proved to be the best producer among the company's nearly 8000 wells and has put 2,400,000 barrels, worth $2,490,000, into the tanks.

The well is Gallman 1, located a few blocks from Oklahoma City's business district, and it still has an average daily output of 500 barrels. The company was reluctant to drill the well at the time because crude had hit an all-time slump of 20 cents a barrel. Property owners in the vicinity also fought the well for the sake of civic beauty.

When the well was completed it gauged 50,000 barrels a day but the feature that has made it so important is its sustained production. Royalty owners have received much more than they could have realized from the sale of the surface rights, one owner having received more than $12,000 and is still receiving $100 a month.

* The author is an attorney associated with the firm of Butler and Binion, Houston.

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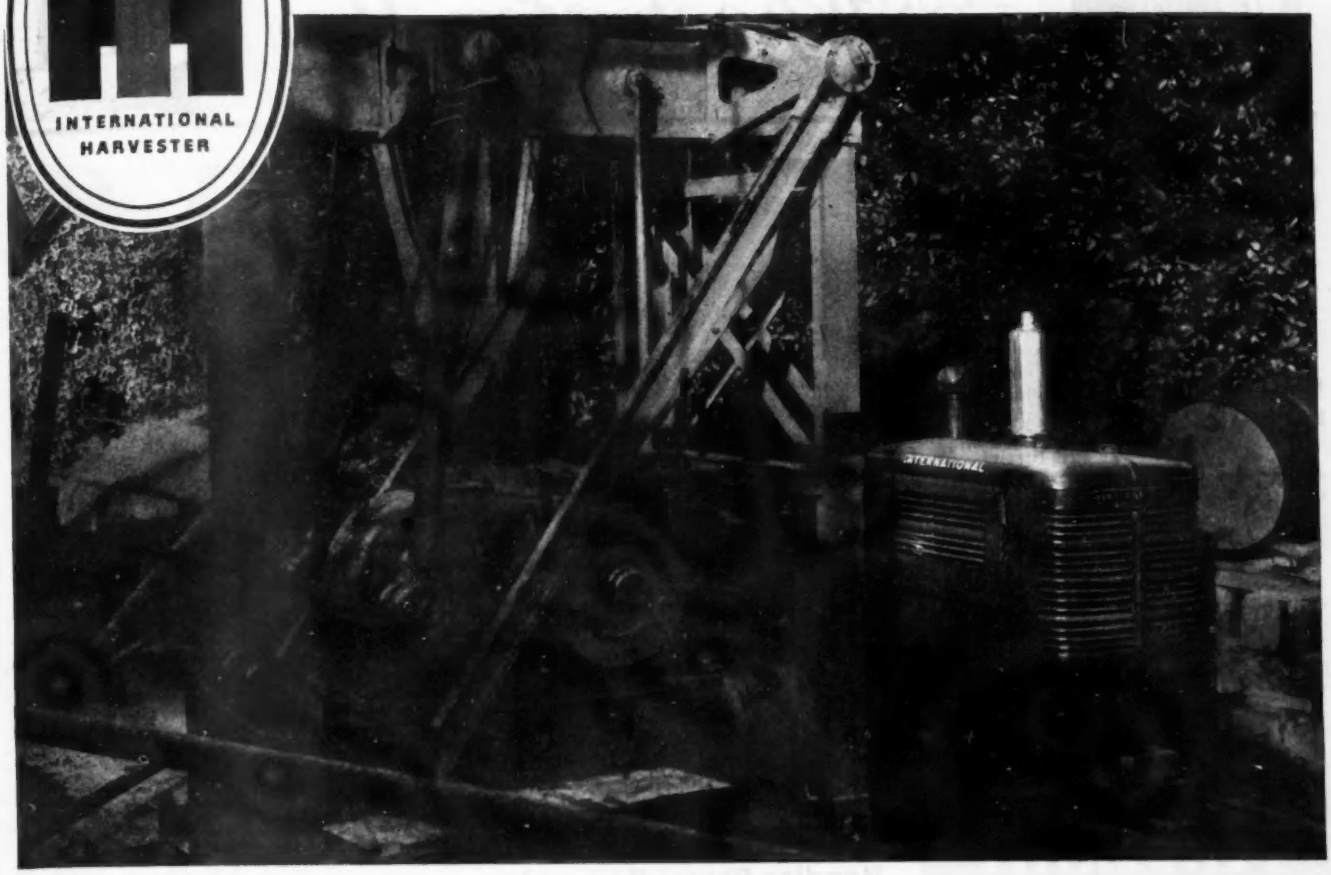

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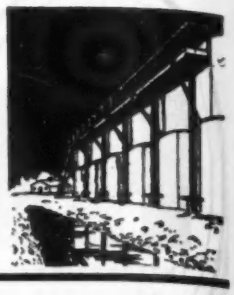


Car-Mounted Vise Speeds Field Pipe Threading

The mechanic of a Kansas producing company, with considerable pipe fitting to do in and around the leases, mounted a vise on the rear of the coupe which he used in getting around the job. Since the spare tire had already become a war casualty, he removed the bracket on the lower portion of the turtleback on which the tire was (formerly) carried. One of the bolt holes thus exposed was used to fasten down one brace from the pump mounting, while a second leg was carried to the rear bumper bracket.

FIELD PIPE LAYING

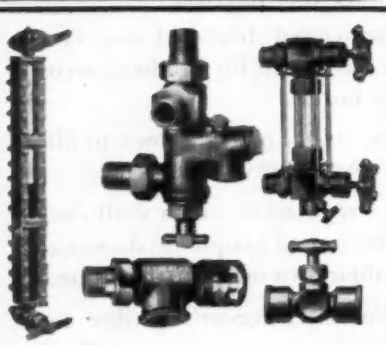
A bolt through the top of the fender and the bracket below held the front of the vise-mounting plank firmly in place. The vise, set at the extreme rear of the plank, is placed so as to open toward the car, to facilitate pipe handling.

On the front fender is welded a heavy U-shaped bracket so that full joints of pipe can be clamped in the vise, the other end resting in the support and tied there with a bit of rope or wire, if travel over a rough road is indicated.

A decided speed-up in connecting fuel and water lines to lease pumping engines was apparent with this installation on the service car.

Plank mounted atop fender and braced to spare wheel support carries standard pipe vise and provides support for handy thread-cutting in field without requiring other auxiliary stand.

PENBERTHY
QUALITY PRODUCTS



Penberthy liquid level gages of various types—injectors—ejectors—all so widely used throughout the oil industry because they have always been dependable under the most severe service conditions.

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PENBERTHY INJECTOR CO.
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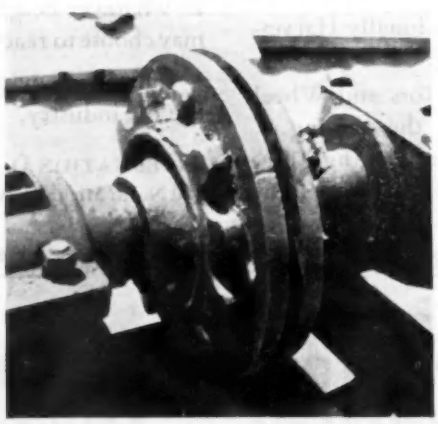
Improvised Universal Handles Power Demands

When standard parts are not available, the oil operator can usually be counted upon to improvise and make his own parts. Such was the case when a universal joint was urgently needed to connect a jack plant with a powered gear box. This type of joint had to be large and strong because at the slow speed which it turned considerable torque was exerted.

POWER UNITS

The basic material of the joint was two mild steel plates 1 inch thick and 16 inches in diameter. One plate has four pins 1½ inches in diameter by 3 inches long welded firmly in place 90 degrees apart on a 12-inch circle. The pins were made from discarded shafting. The pins were driven through the 4 holes in the plate and welded from the back side only. This prevented the distortion and softening of the shafting due to the welding heat on the inside or working side of the coupling. The other half of the joint consists of a plate similar to the pin plate but instead of the pins, 4 holes slightly larger in diameter than the pins are bored. These holes line up with the pins in the other plate.



Steel plate and shafting pins form this wartime universal joint, with salvaged sprocket hubs.

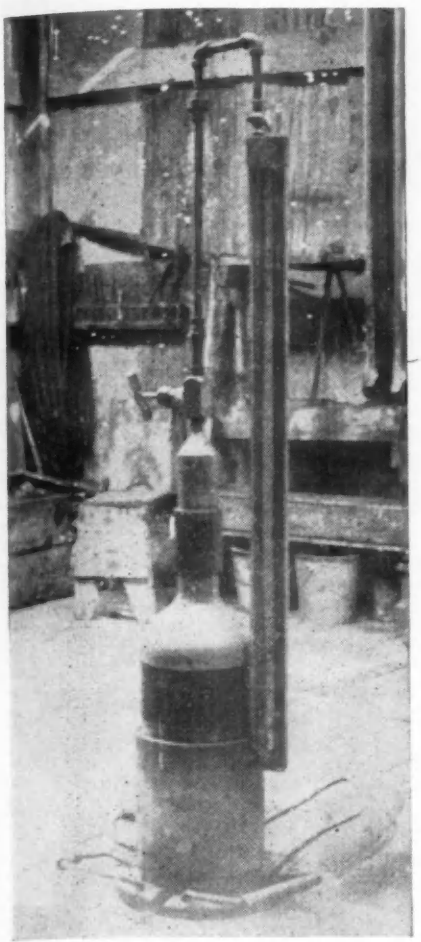
The centers of the circular plates were cut to fit the shafts of the gear box and the shaft on the jack plant. Two used sprockets were attached to the shafts and the circular plates welded to these sprockets. Thus the two halves were easily installed on the two pieces of equipment. In operation considerable mis-alignment was easily taken care of by the loose fitting pins and holes.

Manometer Set-Up Checks Shoestring Gas Flow

Wildcat wells, especially along the shoestring sands encountered in Kansas, sometimes show slight gas flows, which may be sufficient to power the pumping equipment, if desired. Foreknowledge of this fact frequently influences the size and type of pumping equipment set up, and may readily be obtained by means of an expedient worked out by one operator.

FUEL GAS CHECKING

For very small shows, the casing may be swadged down to quarter inch and a manometer screwed on in place of a pressure gage. If the pressure build-up is more rapid, a bourdon type pressure gage may be installed. The daily volume



This set-up gives close check on flow from weak well, forecasting possible power use.

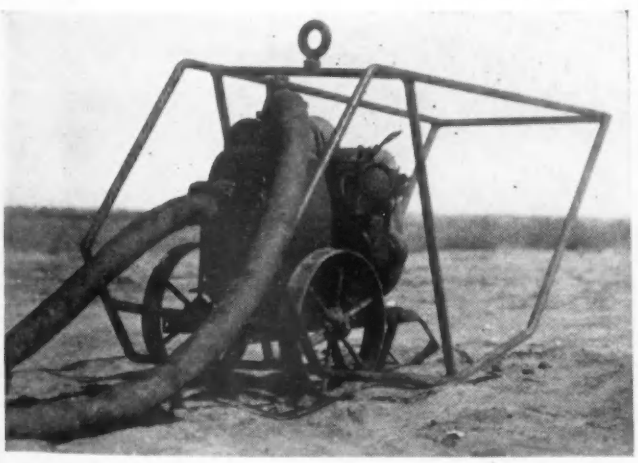
of gas production may be calculated from the following formula:

$$V = \frac{(1440)\ (V_1)\ (P_1)}{\text{Atmospheric Pressure}}$$

where V equals daily volume in cubic feet;

V_1 equals volume of the casing

P_1 equals pressure increase on gage or manometer in one minute of time.



Formed to surround pump, yet afford working space, this frame absorbs all the bumps of field handling, and prolongs service life.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Pipe Frame Encloses Portable Utility Pump

Protection of the portable pump unit from damage, ease of handling and safety are three features of an auxiliary frame, constructed from used pipe and placed around the unit in such a manner that no hindrance is offered to making or breaking connections.

EQUIPMENT PROTECTION

The frame is constructed of ¾-inch pipe, bent or welded to fit. Six inches of clearance is left around the pump between the pump proper and the frame except at the bottom front where the cross brace is welded to the pump frame base with only a small amount of clearance. The front end of the pump with the inlet and outlet hose connections is the strongest part of the pump and needs less clearance due to the swinging or moving about of the inlet and out hose. Sufficient clearance is left for the pump wheels to extend about three inches below the auxiliary frame to assure easy rolling. The rear of the frame is level with the bottom of the pump frame rest and a cross member is welded from each side of the auxiliary frame to the pump frame.

The auxiliary frame constructed in this design allows for a maximum of protection from ordinary abuse through handling. The frame extends only an inch or so beyond the inlet so if tipped toward the front only the frame will hit and not permit the inlet connection to touch. This also applies to the outlet on the top of the pump, protection is added while accessibility is not hindered, as the hose may be connected without coming into contact with the auxiliary frame. The long extension of the parallelogram shape to the read allows for easy towing, dragging or rocking while giving considerable leverage. A workman standing upright is less liable to be injured than one bent almost double therefore a man pulling a pump with this frame while standing upright has a much greater safety factor than a man pulling in the ordinary manner.

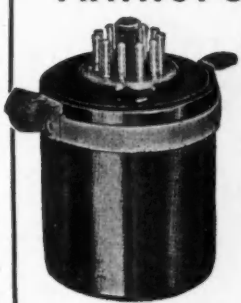
A frame of this type can be winched onto a truck by one man, where ordinarily three men are used to handle a small pump. Very little chance is left for the pump to tip over on a side and if it should the engine and connections are protected against damage. By adding a hook to the top cross brace the pump may be handled with gin poles and placed in almost any position by a truck.

Clean Out with a MILLER Sand Pump

Refer to Composite Catalog page 1907 for description and prices.

Miller Sand Pump Co.
P. O. BOX 4516
OKLAHOMA CITY 9, OKLA.

GEOPHYSICAL TRANSFORMERS



sealed against Sub tropical humidity—"Sextuplex shielding," improved uniformity, minimum size and weight, *plug-in terminal block.

* Also available with terminal lugs.

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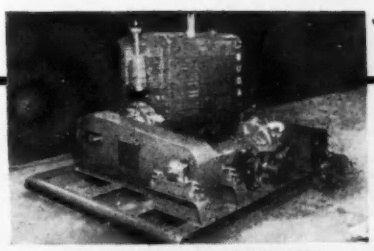
ELECTRONIC, OIL EXPLORATION SUPPLIES



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MANUFACTURERS OF: ASSEMBLED UNITS ON SKIDS • SAFETY MACHINERY GUARDS • PANEL BOARDS • STEEL PRODUCTS MADE TO THE CUSTOMER'S SPECIFICATIONS.

OPERATING HINTS *For Pipeliners*

Belting Straightedge Speeds Pipe Cutting

At every new location or field installation there is always a certain amount of pipe work which requires "custom fitting" of many connections, usually involving some pipe cutting and welding.

PIPE FITTING

A pipe-fitting wrinkle that saves considerable time in the task of making torch cuts consists merely of a short length of light leather belting having straight cut and parallel sides. While probably not new to many of the old school field welders, the idea nevertheless has considerable merit and when properly used will greatly simplify routine pipe work, particularly in these days when crews consist of a much larger percentage of relatively inexperienced hands.

Strip of leather belting serves to guide soapstone as interesections are laid out to proper angles.

The strip of leather, some 4 inches wide by 3 feet long, is used in accurately encircling and marking a pipe to be cut. Drawing the strap snugly around the circumference and marking the pipe with chalk, using the side of the leather as a "straight-edge," will give uniformly good results and will provide square-faced cuts.

A perfect 45-degree angle cut is made as easily as a straight one, it being necessary only to determine the outside diameter of the pipe, then laying off that distance along the length of the pipe. The diagonal cut is made across the square formed by the two sides of the pipe and the measured distance. A more exact cut may be made if three center lines are first laid off, one at the top (as shown in illustration) and one on each side, 90 degrees down the side of the pipe, these lines also being made with the aid of the straight-edge strap. If the pipe-diameter distance laid out along the length of the pipe is then halved, the intersections of the several lines will make it an easy matter to sketch across the pipe to make the 45-degree line.

This method of laying off pipe cuts saves considerable time in both field and shop work, and will eliminate many of the unsatisfactory practices at present employed by some workmen, such as using over-size collars or making awkwardly-handled measurements with rules.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Arched Bend Spans Troublesome Waterway

A pipe-line company in Kansas was experiencing trouble with floating debris being crowded against the lines when they crossed small streams in which the normal trickle would be increased to a torrent in case of flood.

STREAM CROSSINGS

Rather than bury the lines under the stream, the experiment of carrying a cold bend over the channel was tried out and found satisfactory. The bent joint is made with arch enough to it to give ample flood clearance under the pipe, with the ends on both banks anchored by being cast in heavy concrete blocks.

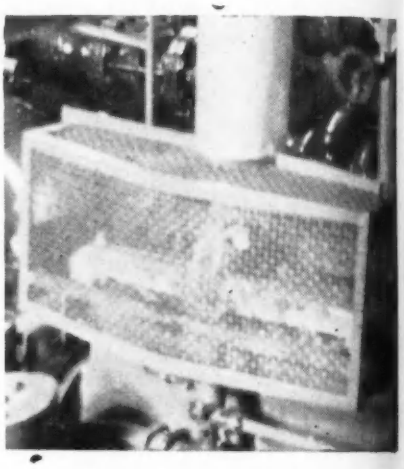
The arch shown in the illustration has stood for years, and weathered many floods, without showing signs of failure or deflection from the original setting.

Sheet steel signs, large enough to block entry to the arch, carrying a warning against trespass, tend to discourage use of the arch as walkway over the stream.

Hardware Mesh Cage Safeguards Hot Manifold

To prevent accidental contact with hot exhaust manifolds in a closely crowded pump room, one company fits a specially built cage over the manifold and the accessible portion of the vertical exhaust stack. The cage is formed with a ¾-inch angle iron frame, in two halves, to clamp around the exhaust stack and permit quick removal. To the light steel frame is tack-welded heavy ½-inch mesh hardware cloth or even more sturdy welded screen of like opening.

OPERATING SAFETY



Light angle-iron cage, covered with ½-inch mesh, prevents contact without impeding normal air cooling of line.

This screen effectively prevents contact with the exhaust system, yet does not seriously cut down on air circulation to the hot parts of the engine, permitting them to be cooled by upward currents and thus not overheated as

Set in heavy concrete pedestals beyond normal sweep of flood currents, this line is secure against displacements which affected it when carried in loose gravel forming stream bed.

Shake Hands with
THE NEW CHAMPION !
Probing more than three miles beneath the earth's surface, Standard of California has sunk the deepest petroleum well of all time.
Back in October, in the Coles Levee field of Kern County, Standard broke the existing world's record at its KCL 20-13. The depth announced at that time was 15,319 feet, substantially deeper than the previous record hole. Since that time, drilling has progressed to 16,246 feet, the final depth . . . making it the king of all deep-well drilling operations.
So, step up and shake hands with the new champion!
Here at Bethlehem, we share Standard's pride in this achievement, for Bethlehem wire rope was among the equipment used on the job—and we're happy to have played a part in this making of oil-country history.
Well done, Standard of California—and thanks for letting us help!
BETHLEHEM STEEL
When you think WIRE ROPE . . . think BETHLEHEM

Anywhere!

Buckeye Trenchers minimize right-of-way work. Dig in any soil. Ruggedly constructed. Faster. Readily maneuvered. Model 12 (shown) for gathering, gasoline and small natural gas lines. Models 32 or 48 for main lines. The standard trenchers for pipeline work.

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TRENCHERS. SHOVELS. CRANES
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PIPE LINE SUPPLIES AND EQUIPMENT

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might be the case were they more completely enclosed.

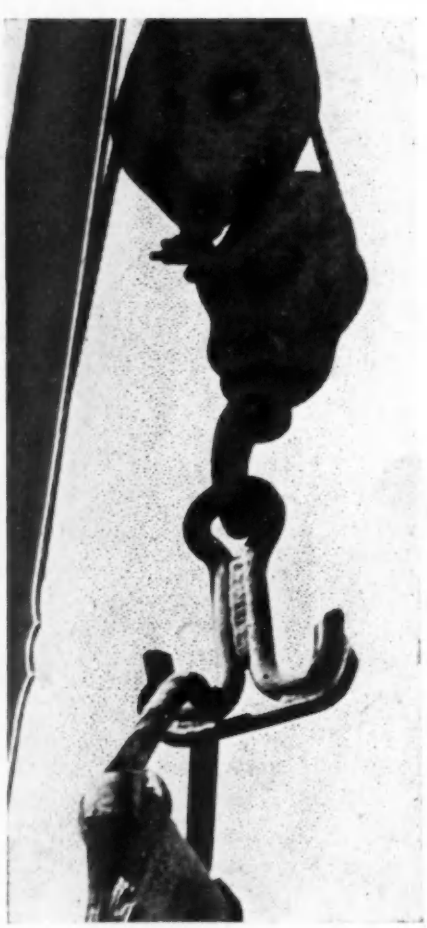
The flange along the abutting tops of both sections may be threaded on one side to coincide with bolt holes in the other, or nuts may be brazed or spot-welded to one side. Either plan provides fixed nuts which cannot rattle loose or drop onto the hot engine when placing or removing the shield.

Welded Sideboom Hook Warns of Overloading

A hook, welded up from bent steel bar sections, is used by one pipeline contractor on his sideboom units in place of the conventional drop-forged or cast hook. The unit has its eye and lifting surfaces formed from a bar of steel, bent into an eye which closely fits the lower block hook, and with two open hooks for attaching the pipe belt or sling ends. The section of the hook where the two sides of the eye-forming loop lie parallel is welded with full beads, while a reinforcing member, made from strap steel, is welded across the base of the two supporting hooks, being bent to conform and the extra metal carried well above any possible point of application of the load.

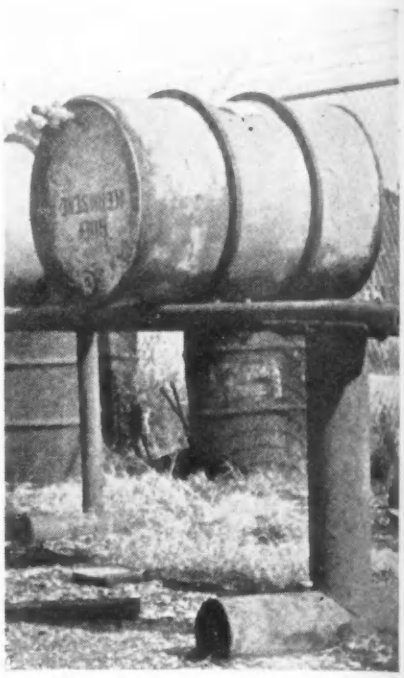
LIFTING EQUIPMENT

Such a hook, in addition to being considerably lighter than any other type of equivalent strength, also indicates impending failure by distortion or collapse of the horizontal reinforcing member, and thus gives warning enough to prevent disastrous and perhaps fatal dropping of the load.



Formed from half-round and bar stock, this unit gives maximum strength with minimum weight.

Pips on Drum Rack Spot Spigot Properly



Nuts welded to pipe rails insure proper spotting of drums, and half roll brings outlet to bottom.

Shortage of gates and plug valves prevents their being fitted to drums used for storage of station lubricants or results in the placing there of units no longer fit to hold relatively high pressures. These makeshift closures usually leak, especially if the drums be exposed to varying temperatures and expansion occurs in the air pocketed above the fluid.

LUBRICANT STORAGE

To prevent this leakage, many operators now require that the drum be rolled through 180° after drawing off lubricant, so as to bring the spigot or valve to the top. This places the drum in position where it is out of balance, and it will tend to roll again on the rack until the heavier section (including valve and nipple) is again down.

One station chocks the drums in the required position by welding to the pipe rails on which the drums are stored pairs of nuts so spaced that when a drum is rolled from one pair to the next it moves the bung opening through a semicircle, and thus, if the outlet be up when the drum rests between one pair of chocks, it will be in proper emptying position when the unit is rolled.

Such a rack requires more length than when drums are racked closely, and calls for slightly more effort in starting the loaded units over the chocks than when rolling on smooth pipe, but the saving in lubricant and maintenance of better conditions around the rack more than compensate for the outlay.

Crude Output and Refinery Runs Near Peaks, But Products Made Are Needed

The industry during the week ended February 10 increased both the production and refinery-processing of crude oil to near-record levels. While plant output of products consequently was exceptionally great, the finished oils moving steadily into channels were needed, and supply was barely in line with demand. Gasoline continued to accumulate seasonally in about normal volume, and the seasonal draft on stocks of heating oils was unabated in spite of a slight increase in production of the latter product. It was necessary also to draw heavily on stocks of residual fuel oil, although the withdrawal was due in part to some cutback in production.

United States crude oil production of 4,728,000 barrels daily in the week of February 10 was 5000 a day more than in the previous week and 329,000 a day or 7.5 percent more than the 4,399,000 a day reported for the week ended Febru- 12 a year ago. The new figure was within 34,000 barrels of the highest daily average ever recorded — in the week ended last September 30.

Crude runs to stills at United States refineries averaged 4,770,000 barrels daily, having continued as in the preceding two weeks in the unusual situation of exceeding domestic production. Since crude stocks have continued about unchanged, this indicates that imports of crude lately have been comparatively high. The runs of 4,770,000 barrels daily were 108,000 higher than in the previous week, ended February 3, and were 494,000 a day or 11.6 percent above runs in the week ended February 12, 1944.

Stocks of refinable crude in the United States totaled 221,674,000 barrels on February 3, an increase of 364,000 barrels over a week previously. The new total was, however, 17,471,000 barrels or 7.3 percent less than the 239,145,000 barrels on hand February 5 a year ago.

Production of gasoline in the nation during the week ended February 10 averaged 2,142,000 barrels daily, including natural gasoline blended at refineries in addition to straight run and cracked output at plants. This production was 66,000 barrels a day higher than that of the previous week and was 280,000 a day or 15 percent greater than output in the corresponding week a year ago. Stocks of finished and unfinished gasoline were increased at the rate of 203,000 barrels daily and rose to 92,455,000 barrels. That amount was 105,577,000 barrels or 13 percent more than the 81,878,000 barrels reported as of February 12 a year ago.

Gas oil and distillate fuel oil production averaged 652,000 barrels daily in the week of February 10, an increase of 1000 barrels a day over the week before and 63,000 a day, or nearly 11 percent, more than production in the corresponding week a year ago. Stocks were further drawn down at the rate of 261,000 barrels daily, having dropped to 30,544,000 barrels. That amount was 4,577,000 barrels or 13 percent less than the 35,121,000 barrels on hand February 12 a year ago.

Residual fuel oil production averaged 1,320,000 barrels daily, off 20,000 from the week before, although 49,000 a day or about 4 percent more than output in the corresponding week a year ago. Stocks were drawn upon at the rate of 229,000 barrels daily and came down to 48,845,000 barrels, new low since the period of the first World War. This amount was 3,574,000 barrels or 6.8 percent less than the 52,419,000 barrels on hand February 12, 1944.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 3
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	[1]4,762	9–30	[1]4,798	12–30	240,992	1– 1	89,162	4– 1	48,863	10–28	64,644	10– 7
1945	4,733	1–20	4,770	2–10	221,628	1–20	92,455	2–10	38,298	1– 6	56,074	1– 6
Lows:												
1939	[2]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 8
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–12
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–13	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	[4]220,258	9– 9	76,302	1– 1	30,232	4–29	49,737	3–18
1945	4,678	1– 6	4,656	1– 6	220,331	1– 6	86,616	1– 6	30,544	2–10	48,845	2–10

TRENDS OF 1944 AND 1945

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,075	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,609
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,462	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,453	8,680	59,859
September 30	[1]4,762	4,775	222,393	14,494	78,028	4,622	45,329	9,292	64,226
October 28	4,740	4,658	223,235	14,117	79,058	4,772	48,705	8,985	64,382
December 2	4,712	4,693	221,591	14,853	80,427	4,082	45,832	8,981	61,727
December 9	4,704	4,552	[4]220,258	14,611	80,880	4,056	44,436	8,923	60,458
December 16	4,695	4,537	222,075	14,145	82,747	4,353	42,413	8,727	59,280
December 23	4,729	4,682	222,575	14,635	83,355	4,605	40,846	8,798	58,509
December 30	4,705	[1]4,798	222,998	15,342	86,614	4,257	39,495	9,156	57,430
1945:									
January 6	4,678	4,656	220,331	14,472	86,616	4,533	38,298	9,092	56,074
January 13	4,722	4,570	221,114	14,139	87,814	4,408	36,410	8,993	54,207
January 20	4,733	4,686	221,628	14,554	88,708	4,586	35,041	9,082	52,554
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,651	9,252	51,119
February 3	4,723	4,662	221,674	14,535	91,034	4,559	32,370	9,377	50,451
February 10, 1945	4,728	4,770	.....	14,996	92,455	4,565	30,544	9,237	48,845
February 12, 1944	4,399	4,276	[5]239,145	13,044	81,878	4,121	35,121	8,894	52,419
Change:									
In week	+5	+108	+364	+461	+1,421	+6	—1,826	—140	—1,606
In year	+329	+494	—17,471	+1,952	+10,577	+444	—4,577	+343	—3,574
In year	+7.5%	+11.6%	—7.3%	+15.0%	+12.9%	+10.8%	—13.0%	+3.9%	—6.8%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, February 5, 1944.

Humble Changes

Humble Oil & Refining Company, Houston, announces the following changes in supervisory forces of the production department:

Mark L. Weatherall promoted to district chief clerk of the Wasson district, Denver City, Texas.

Frank E. Owens, district petroleum engineer, transferred from the Stratton district, Kingsville, Texas, to the Scott and Hopper district, Encino, Texas.

Scouts Cancel Meeting

The twenty-first annual convention of National Oil Scouts & Landmen's Association scheduled to be held at Dallas, March 26-27, has been canceled.

However, a business committee will meet for the election of new officers at the Adolphus Hotel, Dallas, on March 26.

Pipe Line Review

Lawson, Kansas, Carbon Black Plant Is Enlarged

United Carbon Company is enlarging its carbon black plant at Lawson, Kansas, to meet increased war needs for carbon black for the manufacture of synthetic tires.

Plant capacity, which is now 21 million cubic feet of gas daily, will be increased to 28 million feet. The company is supplying its plant from 30 wells in the Grant County sector of the Hugoton gas pool and has used approximately 2½ billion cubic feet of gas. It has 16 additional wells near completion and four locations.

☆

PARKER L. MELVIN, former president of Pennsylvania Grade Crude Oil Association, died recently at his home, in Bradford, Pennsylvania. He was president of the Towne-Melvin Oil Company and a partner in Matson, Towne and Melvin Company, and was the Pennsylvania representative on the Interstate Oil Compact Commission.

FOR SALE

Reconditioned Drilling Equipment and Pipe

DRILL PIPE

2500′ 4½″ full hole, Range II 16.60 lb. A.P.I. Tool Joints—Tool Joints in excellent condition, per foot.....$ 1.50
1500′ 4½″ Hughes full hole streamline Range II 16.60 lb. Drill Pipe, all joints welded.
3500′ 4½″ Range II 16.60 lb., Bottle-neck Hughes flash weld joints, per foot....$ 1.50
14,000′ 3½″ Range II 13.30 lb. Hughes Drill Pipe.
4000′ 2⅞″ Range I 10 lb. Drill Pipe tool joints A.P.I. Reg. on singles.

STEAM ENGINES

1—13 x 14 Gumbo-Buster, Oilbath, late model, Drilling engine's complete....$3000.00
2—Oilwell 12 x 12 Vertical Steam Drilling Engines, Piston Type, Complete. Can be used for direct drive on rotaries.
2—12 x 12 Ideal-Ajax Steam Drilling Engines, Piston Type, Water Trap, Complete with throttle valves, skids and all connections.

DRAW-WORKS—Just Purchased

1—7⅛″ Emsco R. B. Jackshaft, Model H.46 with American Cathead, 36″ Hydromatic Brake.
1—7⅛″ Emsco, Jackshaft, R. B. Excellent Condition, 36″ Hydromatic Brake..$3000.00
1—7⅛″ Gumbo Buster, Roller Bearing Jackshaft, complete.....$3000.00

UNITIZED CORING REELS FOR DEEP DRILLING—Just Purchased

2—15,000′ Coring Units, double brake-band, unitized with 11 x 11 twin R. B. Drilling Engine—Jackshaft between drum and engine, on steel skids.

SUB-STRUCTURE

1—Parkersburg 1,000,000 lb. Capacity Galvanized Sub-Structure, All A.P.I., Complete $1000.00

HYDROMATIC BRAKES

2—Parkersburg 36″ Hydromatic Brakes, ready for service.

SHALE SHAKERS

2—Link-Belt, complete with motor, V-Belts, used very little, Model 40.
2—Symon Shale Shakers, each.....$ 450.00

ROTARIES

2—27½″ Ideal oilbath, Roller Bearing, Completely Overhauled—Model F. E.
1—New Hacker 12½″, All Steel Table, bronze bearings, with 3″ new Square Kelly—32′ long.
1—27½″ Emsco oilbath Type H. Completely reconditioned.

DIRECT DRIVE ROTARY UNIT—Just Purchased

1—27½″ Oilbath Oilwell Rotary, unitized with 10 x 9 Oilwell Vertical Engine on steel skids. Excellent condition.

FLOLITE GENERATOR SETS—Just Purchased

3—7½″ K. W. Flolite Generators, unitized with Hercules 4 cylinder motors, completely reconditioned.

USED PIPE—For Sale or Rental

25,000′ 5″ O. D. Range I 8 thread, 18 lb. Line Pipe No. 1.
50,000′ 2″ 4.60 lb. Range I Tubing, T & C.
70,000′ 2″ Plain Line Pipe, T & C.
200,000′ ⅝″ Sucker Rods.
1,000′ 10¾″ 40 lb. Range I Casing.

9″ IDEAL SPRING HOOKS

2—9″ Ideal enclosed wiggle spring hooks.
2—7″ Ideal enclosed wiggle spring hooks.
1—BJ 150 ton. Completely overhauled.

STEAM PUMPS

2—Wilson-Snyder, 14 x 7⅝ x 18 with Abercrombie Steel Ends, Mounted on steel skids, completely overhauled, a complete unit.....$4750.00
1—Wilson-Snyder, 14 x 7⅝ x 18 Pump, side suction, excellent condition, Late Model $1650.00
1—Gardner-Denver, 15 x 7¼ x 20, excellent condition.....$1500.00

BOILERS

2—Lucey 108 H.P., 250 W. P. complete with all fittings, excellent condition, pass inspection $1500.00
1—Lucey 125 H.P., 250 W. P. complete with all fittings, dry bottom boiler...$1000.00
2—125 H. P., W. P. Donovons, each.....$ 600.00

ALICE PIPE & SUPPLY CO.

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110 Miles of Line Laid In Haynesville Field

Sharman & Allen, Houston contractors, have completed laying 110 miles of pipe, in sizes ranging from 2-inch to 20-inch for the new repressuring system in the Haynesville field, to be operated by the Haynesville Operators Committee.

The installation consists of gathering system and tie-ins for collecting all gas in the field, including casinghead gas, for re-compression and injection into the formation in connection with the new project which is expected to result in recovery of much additional oil from the field.

Hearing Set on Proposed Kansas Natural Gas Line

The Federal Power Commission will hold a hearing in Washington March 14 on the application of the Kansas Power and Light Company for authority to construct new facilities for the transportation of natural gas from the Lake gas field in northeast Barber County, Kansas, to its pipe line system at a point south of Pratt, Kansas, which, after the second year of operation, will make available 66 million cubic feet of natural gas per day.

The project involves construction of 18.5 miles of 16-inch line in Barber County to connect with the existing 18-inch line in Pratt County 20,500 feet of 8-inch line in Barber County to connect with the proposed 16-inch line, 4500 feet of 8-inch line in the same area, also to connect with the 16-inch line, 14,000 feet of 4-inch line to connect wells in Barber County, and a gasoline recovery and dehydration plant.

Sand Draw to Crooks Gap Line Put in Operation

An 8-inch, 36.8-mile line has been put into operation for Sinclair Refining Company from its discovery at Sand Draw Wyoming, to the Crooks Gap, Wyoming, pump station.

O. C. Whitaker Company, Tulsa, which is doing the job, plans to bury the line in April, weather permitting.

Hearing on Line Set

Hearing has been set for March 2 by Federal Power Commission to hear the petition of Central Illinois Public Service Company, Springfield, Illinois, which seeks an order directing Panhandle Eastern Pipe Line Company to connect with the petitioner's distributing system at Mattoon, Illinois, a distance of 20 miles.

☆

HENRY M. BROWN has resigned from the staff of PAW, effective March 31, to return to private industry. He is president of Midland Gasoline Company with headquarters in the Niels Esperson Building, Houston. Brown has served with Petroleum Administration for War as director of the Natural Gas and Natural Gasoline division in District 3 since September 29, 1943. His successor has not been named.

International Developments

Richmond to Drill First Venezuela Test in April

Richmond Pethroleum Company of Venezuela will begin its first activity in April when drilling will be started at La Montanita wildcat location in the state of Falcon.

Richmond now has 74 separate concessions in Venezuela, and with holdings of affiliates controls the exploration rights to approximately 1,180,000 hectares, mostly in the states of Monagas and Zulia, but with substantial blocks in Falcon and Delta Amacuro. The company plans to begin drilling operations in Zulia and Delta Amacuro before the end of 1945, if necessary equipment and materials can be secured.

Drilling of First Well in Pirital Block Is Begun

After twice postponing spudding dates for the first well in the Pirital block, Cedeno-Monagas, Venezuela, the Venezuelan Atlantic Refining Company was to begin operations last week at a location offsetting Mene Grande production in the Travieso 3 block.

Atlantic has three rigs in the area and is virtually assured of success in extending production to the west. The easternmost of its 5 Pirital tracts is bounded on the east and south by proved Mene Grande acreage. Atlantic's closed block extends 15 miles east and west on the north side of the Sinclair pipe line route, and was mostly acquired by purchase from the Pantepec Company.

Central Guarico Wildcat Is Abandoned by Manapire

S.A.P. Manapire (The Texas Company) is abandoning Manapire 2 well in Central Guarico, Venezuela. This represents the second wildcat failure by the company in explorations south of the Mercedes field. No. 2 well was drilled to 4665 feet.

Farther east, in the Delta Amacuro, Texas Petroleum Company (Venezuela) is starting to rig up for the Texas 1 wildcat, 11 miles south of the Texas 2 dry wildcat location, near Tucupita. Derrick is complete after being moved from the No. 2 location.

Shell Drilling on Two Sides of Lagunillas Field

Venezuelan Oil Concessions, Ltd., Royal Dutch Shell subsidiary, has started construction of the first drilling platform in its deep water concession tract beyond Creole producing acreage in the Lagunillas field, Lake Maracaibo. Shell hopes to extend both the Lagunillas and Tia Juana fields in this concession.

The operations are being watched with considerable interest because of the engineering difficulties involved in erecting stable platforms above water as deep as 200 feet. It is reported that if the company is successful in setting record length piles at the experimental location, five holes will be put down with the first rig and derrick installation.

The same company has resumed drilling after a successful fishing job at its BA-1 wildcat, 12 kilometers inland from the eastern producing limits of the Lagunillas field. On January 14 drilling was proceeding below 6100 feet. This well was spudded last August.

Santa Barbara Production To Be Increased in March

Output of the Santa Barbara and Muri fields in Monagas, Venezuela, will be increased in March upon completion of a booster station on the pipe line to Puerto La Cruz. Meanwhile, Sinclair Company has finished erection of two 80,000-barrel storage tanks at El Chaure terminal, north of Puerto La Cruz, and is putting up three more tanks of the same capacity.

Upon completion of these handling facilities, the pipe line is expected to deliver more than 60,000 barrels daily from the fields, and will have a capacity rating of 75,000 barrels.

No announcement has been made recently regarding the status of plans for building a refinery at Puerto La Cruz in accord with the Sinclair agreement with the Venezuelan government.

Wildcat Still Drilling

An erroneous news dispatch from Cairo, Egypt, on January 10 told of the successful completion of South Mediterranean Oilfields' Khatatba 1 wildcat northwest of Cairo.

Officials of the South Mediterranean company state that on January 13 the well was still drilling at 4375 feet, and no oil showings had been encountered.

Rincon Well Testing

Drilling has been halted at Texas Petroleum Company (Venezuela) Rincon Largo No. 3 semi-wildcat, midway between producing areas of the Rincon and Santa Ana fields in Anzoategui. The hole is being plugged back from 9244 feet and is being tested in stages.

La Dorada Test Fails

Richmond Petroleum Company of Colombia has abandoned Chorrea Manteca 2 well, La Dorada concession, as a dry hole at 4410 feet. Rigging up is underway at the No. 1 location and No. 3 will be started before May.

Statement Corrected

In an article appearing in the January 15 issue of THE OIL WEEKLY, under the title "Extravagant Bidding Noted in Current Reach for East Venezuela Concessions," it was stated that Venezuelan Atlantic Refining Company acquired two parcels of land to fill in gaps in the Pantapec Concession Pattern west of Santa Barbara by going to 30 percent in its royalty bid. This statement was in error. Venezuelan Atlantic Refining Company has advised that it obtained the parcels referred to upon a royalty bid of 16-2/3 percent, the minimum authorized by law in Venezuela.

FRANK B. TAYLOR, past president of the Engineers Club of Tulsa, addressed the monthly meeting of the Mid-Continent Section, AIMME, on "Science—Unwilling Master of War."

Safety Courses Adopted By Twenty-five Colleges

In order to consolidate gains made in industrial safety engineering education under the war program of the United States Department of Labor, 25 colleges of engineering have decided to grant safety a permanent place in their curricula, Secretary of Labor Frances Perkins has reported. The list of colleges follows:

Maine, New Hampshire, Northeastern, New York, Rutgers, University of Pennsylvania, University of Pittsburgh, Pennsylvania State, Oklahoma, North Carolina State, Ohio State, Purdue, Illinois Institute of Technology, University of Alabama, Alabama Polytechnic Institute, Georgia Tech, Southern Methodist, University of Texas, Texas A. & M., University of Washington, Stanford, Oregon State, University of Colorado, Michigan State and Minnesota.

"Safety engineering has been established as a subject for college teaching," Secretary Perkins said, "and there is no reason why the safety man of the future should be thrown back upon experience as the only available teacher.

Retirement Plan Adopted By Baker Oil Tools, Inc.

Baker Oil Tools, Incorporated, Los Angeles, has adopted a retirement income plan on behalf of its employes. Participation is entirely voluntary by employes of 3 years standing, the company paying the major part of the cost by deposits in a trust fund. No monies deposited by the company are recoverable by it, and under no circumstances shall funds be used except for the exclusive benefit of participants and their beneficiaries.

Benefits based upon a large group basis are far beyond those obtainable by the employe acting as an individual, and a sum far in excess of his contributions is payable to an employe leaving service of the company after several years of participation in the plan.

In his letter of announcement, President R. C. Baker says in part: "The security offered by the plan should serve to keep us at a high standard at all times, and as we maintain that high standard I want each employe to participate in the company's success."

Oklahoma Hearing Set

Oklahoma Corporation Commission set February 20 to hear application by Amerada Petroleum Corporation for a permit to install a water flood, secondary oil recovery project in 31-9n-9e and the east half of 26-9n-8e, Hughes County, on a communitized basis. The area is the old Adams pool where 12 wells were originally drilled but only 7 are now producing oil and 1 is a gasser. Production averages about 550 barrels of oil daily plus 1150 barrels of water from the Misener-Hunton zones.

Pure Opens Office

The Pure Oil Company is opening a division office in Billings, Montana, under the supervision of H. C. O. Clark. Pure recently acquired several large lease blocks in Montana, Wyoming and Colorado after doing geophysical work. Pure may soon start a drilling program to test one or more of their wildcat prospects in the Rocky Mountain states.

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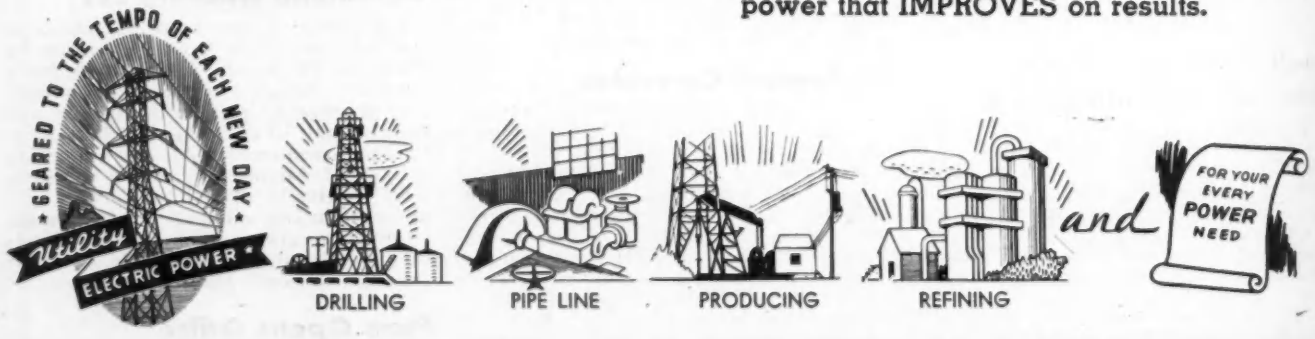

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U. S. Field Operations

Oklahoma

Garfield County Discovery Maintains Production Rate

Garfield County discovery maintains production rate with 5 new locations staked; East Pauls Valley pool defined to the northeast; engineers study West Edmond performance; Sinclair plans deep test in old Garber pool.

Garfield County: Cities Service Oil Company's Mariner 1, NW NE NW 6-22n-3w, major Oklahoma oil strike, continues to hold up at approximately 100 barrels of oil an hour with no water from the Arbuckle lime zone at 5247-97 feet. After Acidizing with 1000 gallons the well performed satisfactorily, flowing about 100 barrels an hour through ¾-inch tubing choke. Ohio Oil Company has staked Elbert 1, SE SE SE 1-22n-4w, a mile southwest of the discovery, and Hermansky 1, SE SE SE 36-23n-4w, 2 locations northwest of the Mariner. Champlin Refining Company staked Hayes 1-C, C NW NW 31-23n-3w, a mile north of the discovery, and Cities Service has 2 locations in prospect, one a north offset and the other a northeast offset to the Mariner well, both in 31-23n-3w.

Garvin County: After failing to show in Pennsylvanian sands, Ohio Oil Company abandoned Luke 1, SW SE SW 8-3n-2e, apparently defining the northeast edge of the East Pauls Valley pool. The well tested several sands and was bottomed at 3507 feet. Several locations east of the pool, operator was rigging up on Chisholm 1, SW NW NW 13-3n-1e, considered a semi-wildcat.

West Edmond: Operators declared a 24-hour "holiday" for the pool beginning at 7 a.m. February 13 for the purpose of making pressure surveys of 100 key wells in the Hunton zone. More than 380 wells were affected by the shutdown, which was ordered by Oklahoma Corporation Commission. At the same time engineers collected gas-oil ratio figures and there was discussion centering around the proposed return of excess gas into the formation to prolong the life of the field. Outcome of the tests will determine what effect the recent reduction in well allowables has had on the field. If the results are satisfactory, it is expected the commission will be asked to further reduce well allowables, which are now 150 barrels per day.

Garber Pool: Sinclair Prairie Oil Company plans a deep test on the site of the discovery well of the old Garber pool, drilled 20 years ago. The test is Hoy 28, NE SE NE 25-22n-4w, and will go to the Arbuckle. Ryan Drilling Company has the contract and is rigging up. The test is an outcome of Cities Service Oil Company's new Arbuckle strike about 2 miles north of the pool limits.

Hughes County: Phillips Petroleum Company's Connelly 1-A, SW NE SW 21-5n-11e, in the Hill Top pool, has been completed as a big gasser gauging approximately 40 million cubic feet of gas per day from Cromwell sand through open casing perforated with 240 shots between 5300-60 feet. Also in the Hill Top area, The Texas Company's Pearson 1, C S½ NE 16-5n-11e, was shut in after showing 4 million feet of gas per day from the Cromwell.

Carter County: Continental Oil Company was preparing to acidize Dotson 1, wildcat in the SW NW NE 7-2s-3w, near the Alma-Zita area. The well swabbed to the bottom of the hole at 6487 feet, recovering oil and wash water, and on a test recovered 50 barrels of new oil.

Moore Area: Sohio Petroleum Company et al's Pohlman 1, NE NW NW 35-10n-3w, which extended the South Moore pool of Cleveland County a location south, made 725 barrels of oil in 24 hours from Bartlesville sand between 7794-7810 feet. O. G. Harp's Mattheson 1, NE NW NE 19-10n-2w, logged the Sylvan shale at minus 7041 feet and was drilling to Wilcox sand below 8300 feet. The well made a sensational recovery of 1350 barrels of oil from the Bartlesville sand earlier in the year and then went dead.

Payne County: Hanlon-Buchanan, Inc.'s Heiring 1, SE C 18-19n-2e, just west of the town of Stillwater, continues testing and apparently opens a new Misener sand pool. At total depth of 4552 feet and with Misener topped at 4545 feet, the well kicked off after swabbing 4 times and flowed an estimated 250 barrels of oil daily. It was shut in for connections and for final production test.

Water-Flood Permit

Oklahoma Corporation Commission has granted permission to the Whitehill Oil Corporation of Tulsa to install a water-flood system on a 50-acre lease in 24-26n-16e, Nowata County, on which 11 wells are located and producing from the Bartlesville sand. The Commission granted a permit to Bridwell Oil Company to drill a salt water disposal well in 30-6s-5w, Jefferson County, to take care of approximately 500 barrels of salt water daily now being produced from the company's wells on the lease.

89 Wells Abandoned

Eighty-nine oil and gas wells were abandoned in Oklahoma from December 18 to January 22, according to the Oklahoma Corporation Commission. During the same period operators drilled 35 dry holes. In the east and west ranges of the state 59 and 30 wells, respectively, were abandoned, and 19 and 16, respectively, were failures.

Wells Completed in United States in Week Ended February 17, 1945

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS						WILDCAT COMPLETIONS				ALL COMPLETIONS			
	New Wells					Old Wells Deepened							Cumulative	
	*Oil	Gas	†Input	Dry	Total		*Oil	Gas	Dry	Total	This Week	Last Week	This Year	Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	....	3	2
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Arkansas	....	....	....	....	....	....	....	....	2	2	2	3	19	20
California	33	....	....	....	33	....	....	....	....	....	33	32	262	216
Colorado	....	....	....	....	....	....	....	....	....	....	....	....	5	3
Florida	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Georgia	....	....	....	....	....	....	....	....	1	1	1	....	2	1
Illinois	27	....	....	4	31	15	1	....	5	6	52	43	293	196
Indiana	2	....	....	....	2	....	....	....	2	2	4	6	37	45
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Kansas	11	....	....	6	17	1	1	1	9	11	29	33	189	248
Kentucky	2	2	....	1	5	....	....	....	1	1	6	5	69	83
Louisiana	6	2	....	1	9	....	1	....	....	1	10	23	122	71
North Louisiana	1	2	....	....	3	....	....	....	....	....	3	4	46	20
South Louisiana	5	....	....	1	6	....	1	....	....	1	7	19	76	51
Michigan	10	....	....	4	14	....	....	....	6	6	20	....	96	77
Mississippi	2	....	....	....	2	....	....	....	2	2	4	7	46	10
Missouri	....	....	....	....	....	....	....	....	....	....	....	....	6	3
Montana	2	....	....	1	3	....	....	....	1	1	4	5	22	34
Nebraska	....	....	....	....	....	....	....	....	1	1	1	....	1	5
New Mexico	3	....	....	....	3	....	....	....	3	3	6	11	68	49
New York	15	....	10	....	25	....	....	....	....	....	25	25	112	147
Ohio	3	2	....	3	8	....	....	....	....	....	8	5	77	108
Oklahoma	32	3	2	8	45	....	....	....	2	2	47	55	304	189
Pennsylvania	27	2	15	....	44	....	....	....	....	....	44	46	290	333
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	....	3
Texas	49	7	....	14	70	....	2	1	25	28	98	88	812	623
E.Tex.Bor. Co.'s	....	3	....	....	3	....	....	....	....	....	3	....	5	2
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Rest of E. Texas	1	....	....	....	1	....	....	....	3	3	4	5	31	35
North Texas	16	....	....	5	21	....	....	....	5	5	26	4	203	132
W. Central Tex.	3	....	....	1	4	....	....	....	5	5	9	11	43	48
West Texas	....	....	....	....	....	....	....	....	4	4	4	8	170	162
Tex. Panhandle	4	2	....	....	6	....	....	....	....	....	6	16	80	21
G. Coast, Upper	8	2	....	1	11	....	2	....	2	4	15	13	85	58
G. Coast, Lower	13	....	....	4	17	....	....	1	3	4	21	21	131	112
Southwest Texas	3	....	....	3	6	....	....	....	2	2	8	10	57	44
S. Central Tex.	1	....	....	....	1	....	....	....	1	1	2	....	7	8
West Virginia	2	21	....	....	23	....	....	....	....	....	23	11	94	124
Wyoming	3	....	....	....	3	....	2	....	2	4	7	4	20	18
Total U. S.	229	39	27	42	337	16	7	2	62	71	424	402	2,951	2,611

* Includes distillate wells. † Includes salt water disposal wells.

Kansas

Two Tests Appear to Be Openers of New Pools

Pawnee Rock area spotlights Kansas activities as two tests look like pool openers; Phillips discovery near Hiss pool flows 10 million cubic feet of gas daily; wildcat near Hugoton makes poor showing; Kansas wildcat operations total 50 for week compared with 81 this time last year.

Barton County: A hot lease and royalty play in the Pawnee Rock area is current as the Solar Oil Company appears to be completing a flowing well at Behrens 1, SW NE 6-20s-15w, about a mile north of the Pawnee Rock East pool, recent extension to the Pawnee Rock pool. On production test the well swabbed more than 10 barrels of good gravity oil an hour in 6 hours through casing perforations in the Arbuckle lime from 3729-33 feet, with considerable gas. The Arbuckle is about level with producers in the established pool and the discovery may be a long extension.

In the same county, Phillips Petroleum Company's Spani 1, NE NW NE 36-20s-14w, listed as the year's first new oil strike for Kansas, was reported making 10 million feet of gas from Lansing lime at 3189-3276 feet, with operator mudding off gas for an oil production test. The well extends the Hiss pool ½ mile southwest.

Rush County: About 3 miles northwest of the Pawnee Rock pool, Inland Oil Company's Peterson 1, SE SE SW 35-19s-16w, flowed about 50 barrels of oil natural in 15 hours through casing from Stalnaker sand from 3735-37 feet. Arbuckle lime, topped several feet higher than pool wells, showed good porosity and saturation. The well is on a Texas Company farmout and is on a seismograph high.

Barber County: After acidizing the Simpson zone, Lion Oil Refining Company's Shriver 1, NW C 1-30s-14w, gauged 11 million cubic feet of gas through casing perforations from 4509-13 feet, with a reported helium gas content of 1.75 percent. The well is a west offset to another Lion gasser producing from Arbuckle lime and reported to carry 2 percent helium gas. The Arbuckle carried water in the Shriver well.

Stanton County: Stanolind Oil & Gas Company's CC&P 1, in the center of 32-30s-39w, about 9 miles west of the Hugoton pool, gauged 3 million feet of gas from the Krider-Winfield zone from 2170-2302 feet. The well is believed to be an edge producer.

New Rules on Production Are Adopted in Oklahoma

Oklahoma Corporation Commission has adopted new rules governing production phases of the state's oil and gas industry. This is the third set of regulations adopted by the commission since the enactment of the first oil and gas conservation laws in the state in 1917.

Designed to supercede orders made obsolete by progress made in geology and engineering practices, the rules were prepared by a committee of operators headed by W. A. Delaney, Jr. Others in the group were: Coordinating committee, E. G. DePrade, chairman; drilling and development, W. T. Payne, chairman; oil production methods, Fred Lichtenheld, chairman; gas production, E. C. McAninch, chairman; secondary recovery and pressure maintenance, Jack Abernathy, chairman; transportation and purchasing, A. L. Dade, chairman; and legal committee, Alvin Richards, chairman.

In announcing the rules, the commission declared that while they are not unanimously agreed to by every operator in the state, and in some instances represent a compromise of opinions, they are "fair and just and are the best possible rules and regulations that can be adopted at this time, and will not work undue hardship on any operator."

Oklahoma Allowable Set

Oklahoma Corporation Commission has fixed the state's daily oil production for March at 391,000 barrels daily, as compared with 388,500 barrels for February. The order fixed crude oil production at 363,000 barrels a day and other petroleum products at 28,000 barrels a day. West Edmond will be permitted to run 63,750 barrels a day, compared with 56,250 barrels a day during February. Production from other allocated areas remains unchanged.

New Mexico

Lea Test Heralded As Prospective Discovery

Lea County deep test heralded as prospective Clear Fork discovery; Gulf test fails to encounter pay at 6690 feet; test near Lovington field shows dry on drill stem test; Humble test shows small amount of oil on preliminary test.

Skelly Oil Company's Steeler 2, C NE NE 17-23s-37e, first deep test for the Skelly field, Lea County, was heralded as a prospective Clear Fork lime discovery with fair to good oil saturation and porosity between 6152-92 feet. Steeler 2 passed up porosity and stain at 5465-5510 feet that yielded 93 feet of gas-cut mud when tester was used at 5462-5520 feet.

Gulf Oil Corporation's State Andrews 1, 1⅝ miles southeast of its Clear Fork 6400-foot discovery in the Penrose deep field, has failed to encounter pay in drilling to 6690 feet although the Fullerton (Tubb) zone was entered at 6150 feet or 33 feet low. The company's Gutman 1, north offset to the discovery, was drilling dry lime at 6980 feet, having passed up the projected pay zone without testing.

The Texas Company's Eaves 1, C SE NE 26-16s-38e, Lea County wildcat and 10½ miles east by north of the South Lovington field, recovered fair to good porosity and oil stain in core at 5374-92 feet but proved dry on drill stem test. Coring was resumed. The Brown lime and San Andrews were topped at 3380 feet and 5030 feet, respectively, with elevation of 2697 feet.

Humble Oil and Refining Company's Keinath Federal 1, prospective Clear Fork strike near east edge of Lea County, showed a small amount of oil on preliminary test of perforations at 7300-25 and 7480-7530 feet, but was swabbing only rotary fluid on last report. It was drilled to granite at 9954 feet, then plugged back to set pipe at 7553 feet.

West Texas

Andrews County Wildcat Logs Additional Oil Pay

Lower Permian wildcat in Southwestern Andrews County proceeding to Ordovician after logging additional oil pay; Fullerton field virtually defined in Clear Fork zone except to northeast and north; Ector County's second Ellenburger test finds abundance of water; Stanolind Oil & Gas Company purchases 2 leases in Cedar Lake field.

Andrews County: Shell Oil Company and The Texas Company's Ratliff-Bedford 1, 8½ miles west of Permian production and 2½ miles northwest of a 11,322-foot failure in granite, was drilling cherty-lime at 8135 feet to explore the Ellenburger before running pipe to complete in Basal Permian. This wildcat flowed 36-gravity oil when tested was used at 7755-7844 feet and again at 7845-62 feet, with a small amount of salty-sulphur water noted in breaking down drill-pipe.

A later drill stem test at 7846-7880 feet returned 4900 feet of oil and 2800 feet of salt water with closed in bottomhole pressure calculated at 3000 pounds.

The producing zone has not been definitely identified, although the test entered the Glorietta at 5540 feet and the Tubb (Clear Fork) at 6500 feet with elevation of 3204 feet.

Stanolind Oil & Gas Company's University 1-D, situated on a record-priced wildcat block and a failure in the Ellenburger and Silurian, was showing a small amount of free oil with rotary fluid after acid treatment of Devonian perforations at 8300-50 feet, having plugged back from 10,466 feet. Since oil saturation was logged in Devonian between 8037-8330 feet, a commercial well is anticipated when perforations are made opposite the upper pay section.

Magnolia Petroleum Company's Martin 1, C NE NE PSL 13, Block A-47, 5 miles south by east of the Fullerton-Devonian area, promises to open a new Devonian area as drill stem test at 8727-68 feet yielded the 800-foot water cushion followed by 40 feet of pipe line oil, 900 feet of oil and gas-cut rotary fluid, and 100 feet of gas-cut mud. This wildcat entered the Fullerton, or Tubb zone, at 6720 feet with elevation of 3280 feet, being 195 feet low to the Fullerton-Devonian area discovery. Martin 1 was coring at 8780 feet to explore the zone before running pipe.

Property Sale: Stanolind Oil & Gas Company, discoverer and principal producer in the Cedar Lake field, Gaines County, paid $215,000 cash for George P. Livermore, Inc.'s Jones 162-acre lease with 4 pumpers and the Gus White 80-acre lease with 2 pumpers in the 4700-foot San Andres. These 2 developed leases are on the northeast edge of the field and were farmed out early in 1942 by Humble Oil & Refining Company, which retained 1/16 over-riding royalty and mineral rights below 5000 feet.

Lubbock County: Magnolia Petroleum Company's Johnson 1, first Ordovician test for the county, failed to indicate production in Ellenburger, topped at 10,066 feet with elevation of 3166 feet, and was coring granite-wash at

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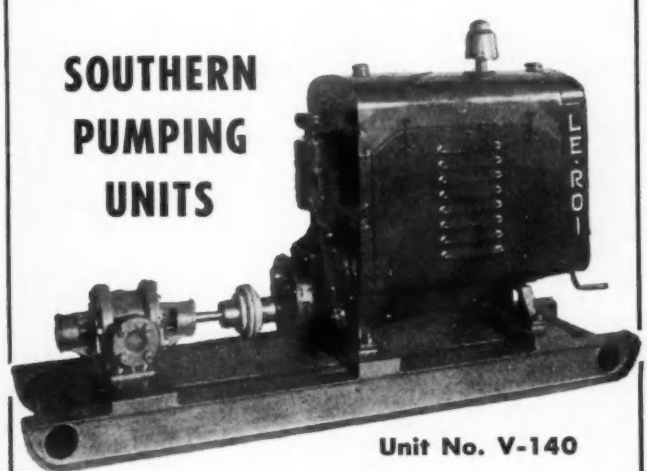

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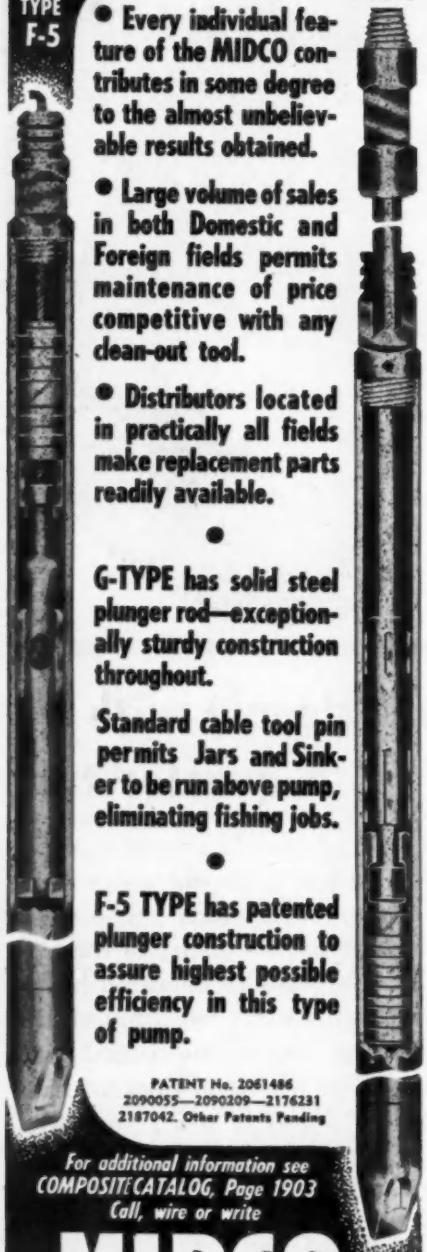

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10,171 feet. Seaboard Oil Company and Texas Pacific Coal & Oil Company's Nairn 2, a mile northwest of the Lubbock (Nairn) pool discovery pumper, was drilling at 4973 feet, having recovered 11 feet of lime, bleeding oil and water, in core at 4957-69 feet. It is below the projected oil level.

Deep Tests: Humble Oil & Refining Company's Parrott 1, Eastern Upton County prospect that passed up a small volume of oil in broken Clear Fork at 7250-7575 feet, was drilling limey-shale at 9294 feet, while the company's Buchanan 1, Midland County Ordovician prospect, cemented a 7⅝-inch protection string at 8819 feet. Standard Oil Company of Texas' Durgin 1-X, Ellenburger test for the South Ward 2500-foot oil area, Ward County, entered dry Wolfcamp at 6037 feet with elevation of 2568 feet, and was drilling lime at 6360 feet. Stanolind Oil & Gas Company's Slaughter 1, 2 miles south of Morton, was idle for rig repairs in lime at 9737 feet, having entered the Wolfcamp at 8358 feet and white dolomite at 8390 feet. Igneous rock was anticipated above its present level.

Ector County: The Texas Company and Phillips Petroleum Company's Cowden 1, near regular Permian production in the Ector County sector of the Embar field and 3¾ miles south of nearest Ellenburger production on the same structure, entered Simpson at 8010 feet and Ellenburger at 8708 feet, being 818 feet low, and almost filled with sulphur water when tester was used at 8700-24 feet. Cowden 1 was deepened to 8967 feet, where it was awaiting plugging orders. The Texas Company's T. P. Land Trust-Fraser 1-B, deepest of 8 active tests within and outlying from the TXL pool, was drilling Devonian lime at 8320 feet, having tested dry when tester was used at 8068-8239 feet, although this zone carried adequate oil stain and porosity to warrant further testing, if production is not obtained below.

Wheeler-Ellenburger: Stanolind Oil & Gas Company and Shell Oil Company's Blue 3, southeast offset to the discovery, which failed to indicate production above the Ellenburger, flowed oil through tester from the Devonian at 8354-8457 feet, and was drilling at 8715 feet. The partnership's R. H. Blue 1, south offset to the most northeasterly producer, missed the Devonian oil zone, and was drilling chert at 8710 feet.

Fullerton-Union: Union Oil Company of California's Biles 9, ¼ mile west of Clear Fork production, became the second failure for the Union sector in testing water in Devonian at 8770-8803 feet, and proved dry in plugging back to test Clear Fork at 7105-7240 feet. Magnolia Petroleum Company's Ralph 1-A, west outpost for Fullerton field, was drilling shaley-lime at 10,185 feet. Frontier Fuel Oil Corporation et al's University 1-A, 2⅞ miles southeast of Fullerton-Devonian production, was abandoned at 7600 feet. The development of the Clear Fork zone in the Fullerton area has progressed sufficiently to indicate that future major extensions will be confined to the northeast trend and also continue northwest into the Union area.

Texas Panhandle

Humble Oil & Refining Company's Hyslop 1, C NW SE 18-3n-1e, Western Deaf Smith County wildcat, encountered granite in pulling core at 7803-05 feet. This geophysical prospect entered the San Andres at 2710 feet and the Pennsylvanian (Cisco) at 6090 feet with elevation of 4448 feet.

Lease buying occurred recently around the 14,000-acre drilling block and in Curry County, New Mexico; on the strength of reported oil saturation near the 6500-foot level.

North Texas

Development of Antelope Field Due for Revision

Development of Antelope field, Clay County, will be revised through south extension completion; Grayson County deep prospect cased off junk, and will deepen before making production test.

Clay County: Lewis Breeden et al's Barry 1, 2240 feet south of the west side of the Antelope field, recorded 249-barrel pumping potential from Strawn sand at 3153-72 feet. Top of pay is flat with nearest producer.

Grayson County: The Pure Oil Company's Quintin Little 1-A, Gordonville prospect, has apparently overcome a difficult fishing job by landing 8⅝-inch casing at 2903 feet, thereby excluding a section of drill-pipe left in the hole near the 2500-2800-foot level. This wildcat is bottomed at 9532 feet in Ellenburger, and will run 5½-inch pipe to make production test of Simpson porosity regardless of results from deepening.

Cooke County: The Texas Company's Gainesville National Bank 2, northeast offset to its Northwest Walnut Bend field discovery in Ellenburger at 5409-63 feet, cemented 7-inch casing at 5415 feet near top of Ellenburger to complete at 5515 feet. This confirmation test made a more impressive showing in the 4100 and 4700-foot Strawn sands, as drill stem test in Ellenburger at 5420-70 feet returned only 30 feet of mud, while the second test at 5455-5505 feet yielded 270 feet of oil and gas-cut mud with subnormal bottom-hole pressure.

Clay County: Anderson-Prichard Oil Corporation's Wood 1-B, east offset to its recent 5900-foot Bend discovery, landed pipe at 6186 feet after drilling through the Bend lime and conglomerate section, topped at 5876 feet, being 6 feet high, to shale at 6270 feet. Perforations will be made opposite oil-saturated conglomerate at 5986-92 feet that is lower than discovery pay due to an overlying hard lime zone not present in the first well. The firm's third test will be a south offset to the discovery. The Texas Company's Stine 3, SE SE NE H&TC 24, Block 4, offsetting production in the Spring sector of the Ringgold area, tested dry at 5900 feet and will plug back to try for completion at several levels below 5610 feet. Barnsdall Oil Company's Stine 1, south offset to the above project, entered the Bend at 5551 feet, but failed to indicate oil or water in testing by stages at 5995 feet.

☆

W. T. RAPP, drilling contractor, died in Oklahoma City, February 9. Rapp, 52, is survived by his widow, a son, a daughter and two brothers. He was a member of the Masonic Lodge at Okmulgee, and of the Scottish Rite at McAlester and the Shrine at Muskogee, Oklahoma.

East Texas

Freestone Given First Travis Peak Production

Freestone County gained a new producing area and its first production from the Travis Peak when The Texas Company's McKnight 1, I. H. Reed survey, 3 miles southwest of Fairfield, produced distillate at the rate of 1½ barrels hourly with gas volume rated at 1,255,000 feet daily through drill stem chokes.

This production is from perforations at 8286-97 feet in Travis Peak, topped at 7985 feet with elevation of 458 feet. Perforations are due to be made opposite the first porous zone at 8233-46 feet, should further test through tubing fail to stimulate the production. McKnight 1 was drilled to water at 8903 feet. It is 6⅓ miles southwest of the Steward Mill 1-well gas pool in Woodbine sand.

Cherokee County: Humble Oil & Refining Company's Stanley 1, 3700 feet south by west of its Larissa pool discovery, was showing a small volume of oil with wash-water while cleaning itself through ¾-inch choke after using 1500 gallons of acid through perforations at 9570-9600 feet. Production is from the upper Glen Rose, which rarely produces in the district and heretofore has not been rated as a commercial zone. Stanley 1 proved dry in the 10,200-foot discovery zone.

Henderson County: The Texas Company's Morse 1, 1½ miles southwest of Chandler and 4 miles northwest of a 10,714-foot failure, entered Travis Peak at 10,307 feet, being 149 feet high, and was coring at 10,320 feet with nominal oil stain and evidence of gas immediately above and below the Rodessa-Travis Peak contact. Gulf Oil Corporation's Frizzell 1, Baxter area and unusually low structurally, was coring anhydrite and shale at 11,440 feet, with top of massive anhydrite called at 10,815 feet.

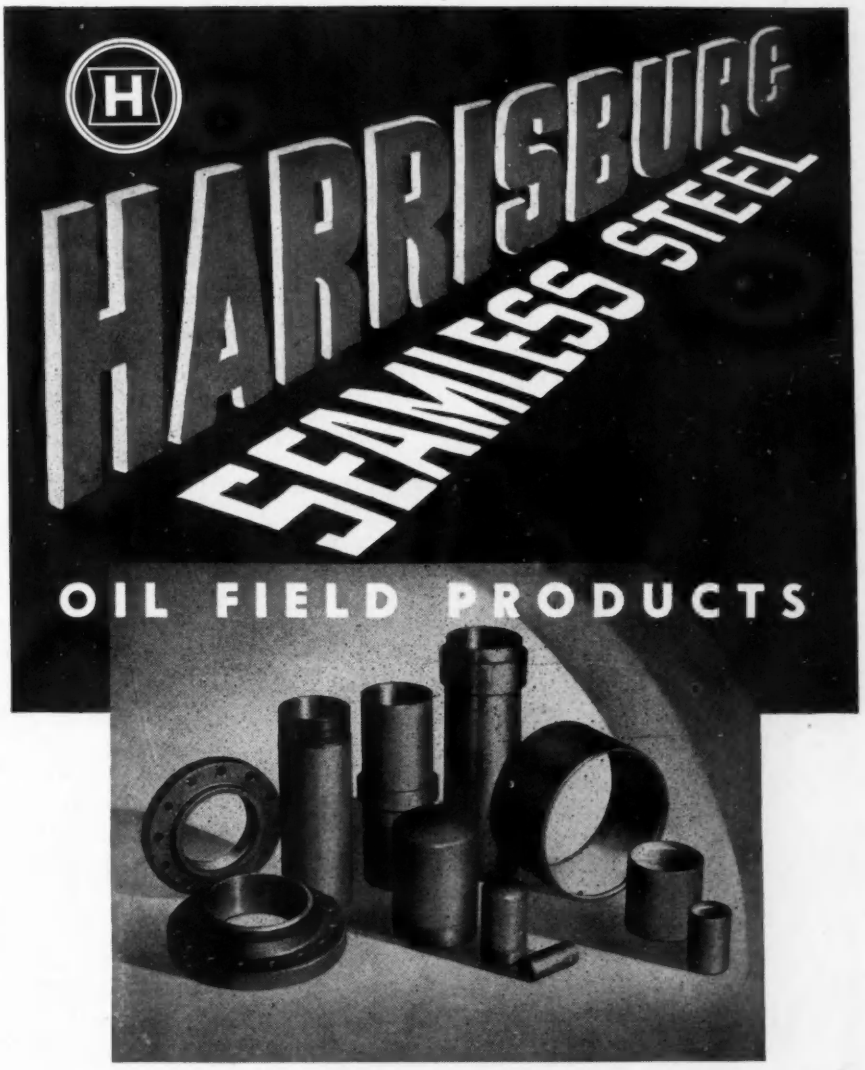
Hunt County: Ohio Oil Company's Popper 1, projected Smackover test for the cash faulted structure, entered the Travis Peak at 5765 feet with elevation of 479 feet, and was drilling dry sandy shale at 5835 feet.

Rusk County: H. C. Owens et al's Rousseau 1, Robert Gilkerson Survey and 4½ miles northeast of Minden, resumed testing after indicating a small gas-distillate well in October, and was rated at 3 million to 5 million cubic feet of gas daily, with 30 barrels of distillate per million feet of gas, from Travis Peak perforations at 7382-89 feet.

Wood County: Lone Star Producing Company's Goode 1, south of the Van field and lower structurally than previous deep tests in the area, entered the massive anhydrite at 6174 feet with elevation of 491 feet, and was drilling limey-shale at 6640 feet.

☆

LOUIS ROARK, formerly chief geologist for Margay Oil Corporation, Tulsa, has joined Sunray Oil Corporation, Tulsa, as assistant to H. S. McClintock, vice president in charge of the land department. He formerly was a consulting geologist and drilled the discovery well in the Bemis, Kansas, pool.



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Southwest Texas

Wildcat in Duval County May Open New Oil Field

Possibility of a new field in Duval County highlights news from area.

Duval County: M. M. Miller & Sons' George Herberger 1, wildcat 9 miles south of Benavides in the Agua Poquita Survey Block 26, has indicated that it should open a new oil field for the county, having recovered 2000 feet of oil on a drill stem test in Pettus sand. The well had been drilled to 5960 feet, setting casing at 5890 feet, for a series of tests starting at 5145-48 feet, but failed to show in upper sand and perforated at 5840-52 feet for a drill stem test. Open 1 hour and using ¼-inch chokes it recovered 2000 feet of clean oil under 38 pounds working pressure. It is now preparing to complete through this set of perforations.

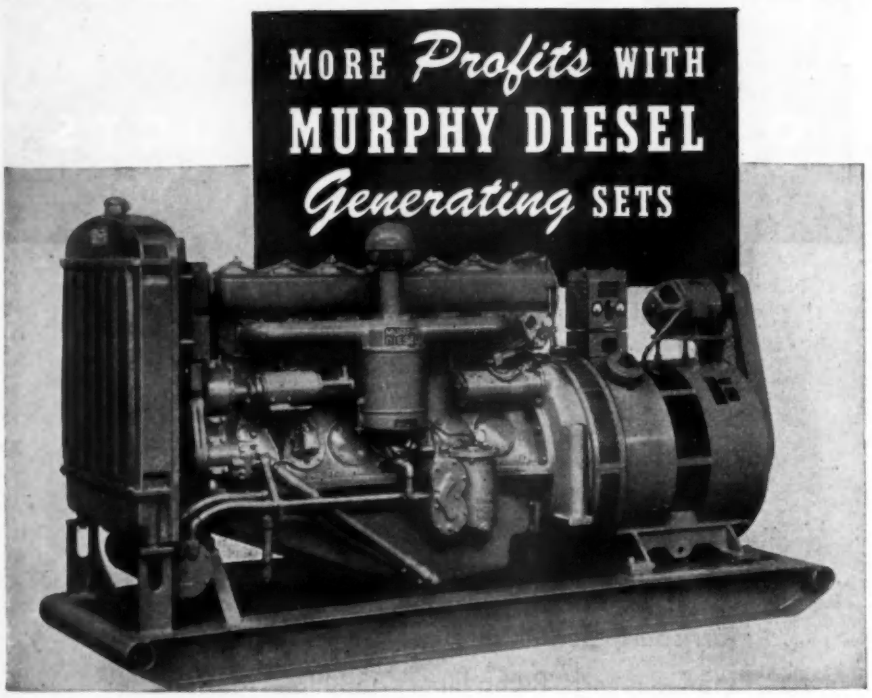
Taylor Refining Company's A. Parr F-3, in the Thomas Lockhart field, was completed from perforations at 4771-81 feet and 4086-91 feet. No potential has been filed on the upper sand, but the lower sand produced 58 barrels of 44.8-gravity oil in 24 hours through a 7/64-inch choke with tubing pressure 375 pounds.

Argo Oil Corporation was making location for its Carrillo Heirs 1, a wildcat 10 miles north of Benavides, contracted to 5000 feet for a Pettus sand test. Location is in A.B.&M. Survey 183.

Jim Hogg County: R. F. Schoolfield of San Antonio is making location for Rosa G. Palacios 1, in Survey 291, Randado field, on a lease producing from a sand at around 1350 feet. The test is scheduled through the shallower horizons as a test for deeper sands at around 2750 feet.

Starr County: Sun Oil Company has made location for 2 wells in the North Sun area, one of which, its Isabel V. Montalvo B-3, will be an outpost 7500 feet northerly from production. Location is in Tract B of the Retachez grant, and it will be drilled to 7500 feet. Sun's other new location is for J. G. de Garza 3, a 6100-foot well within the field itself.

McMullen County: Humble Oil & Refining Company has abandoned E. M. Baker 1, 17 miles southwest of George West, after drilling to 9031 feet after failure to show encouragement in tests at about 6300 feet, 6400 feet, and 6900 feet.



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Lower Texas Coast

Bee County Wildcat May Be Opener of New Pool

New field in prospect in Bee County; Karnes County may have two new gas-distillate fields; Seaboard is preparing for another test in Live Oak County wildcat.

Bee County: Fred W. Shield's J. L. Courtney 1, wildcat in Tulsita townsite, cored from 7295-7345 feet without picking up the Mackhank sand expected at about that interval, and is preparing to drill to contract depth of 7500 feet and run electric logging survey. This well has shown oil on a number of tests just above this point and should make a producer. Latest test was at 7058-68 feet in the Slick sand section, where it recovered 350 feet of oil in 15 minutes with 46 pounds working pressure. A test at 7048-58 feet, also open 15 minutes, showed 1500 feet of oil. The top of the Slick sand section was picked up at 7013 feet, and sand and shale with shows of oil were found from 7013-68 feet.

W. Earl Rowe's Nona Berry Davis 2, in the Yougeen area, nearly a mile from production, was still cleaning through a ⅛-inch choke at latest report, showing gas and wash water from perforations at 3780-86 feet. It had recovered oil on drill stem tests just below 3600 feet.

Karnes County: Phillips Petroleum Company's W. P. Belknap, Jr., 1, wildcat 7½ miles southeast of Kenedy in the Charles Haynes Survey, is opening a gas-distillate field from perforations at 7031-35 feet. Preliminary tests showed 2½ barrels of 59-gravity condensate and 1,600,000 cubic feet of gas daily on a drill stem test which showed 2475 pounds working pressure before being shut in. Total depth is 8033 feet with casing set at 8028 feet.

Two miles southeast of Coy City in the Henry S. Brown Survey, Seaboard Oil Corporation's Sallye Treadwell 1 is standing cemented at 8055 feet after setting casing at 7920 feet. It had shown gas and distillate on tests at 6869-79 feet, 6879-87 feet, and at 7012-19 feet, and is expected to open a new gas-distillate field.

Live Oak County: Continental Oil Company's Kittie West Schreiner 1, 5 miles south of Kittie, has made a squeeze job at 7198-7202 feet, and will try to complete in one of the sands where it previously showed some oil and gas.

Upper Texas Coast

New Field Is Assured For San Jacinto County

New field assured for San Jacinto County; further showings in Tyler County wildcat indicate opening of another field; Satsuma field extended nearly ½ mile west; Phillips Petroleum Company reaches 15,186 feet in its Brazos County well.

San Jacinto County: Navarro Oil Company's Foster Lumber Company 1, opening a new Wilcox sand oilfield in San Jacinto County, was still testing after making preliminary tests assuring production. The well was being further tested late in the week in an effort to reduce gas-oil ratios. First test was made with casing perforated at 7905-10 feet, and the well flowed at the rate of 5 barrels of 48-gravity oil per hour through a 3/16-inch choke with tubing pressure 2450 pounds and casing pressure 2500 pounds. Perforations were squeezed to try to shut off part of the gas, and another test made with the casing shot at the same point. On an 8-hour test, with 3/16-inch choke at top and ¼-inch choke at bottom, it flowed an estimated 4½ barrels of 49-gravity oil hourly with ratio estimated at 10,000 to 12,000-1 and flowing pressure 1900 pounds. It is preparing to squeeze and will doubtless reperforate lower in the sand for the next test.

Harris County: Tide Water Associated Oil Company's Cobb 1, 2000 feet west of production in the Satsuma field, has been tested through perforations at 6824-26 feet, and probably will extend the field. On a drill stem test with ¼-inch chokes at top and bottom, it flowed at the rate of 10 barrels of oil hourly with 410 pounds working pressure, and recovered 6375 feet of oil and 450 feet of salt water. It has squeezed and is waiting on cement before completing.

Humble Oil & Refining Company's Hutcheson 9, deep test in the Clear Lake field, is preparing to run a string of 7-inch casing after drilling to 9862 feet in soft sand.

Humble's deep test at Tomball field, Milo 10, is drilling below 8145 feet in shale.

Montgomery County: Pan American Production Company's Posey 1, deep test at Pinehurst in the southern part of the county, is coring below 11,253 feet after cementing casing at 11,226 feet.

Tyler County: The Atlantic Refining Company's Houston Oil Company-American Republics Corporation 1, wildcat in southern Tyler County, is preparing to test again after reperforating at 8390-92½ feet. This well has shown oil on several tests but is having trouble getting water separation. On latest test at 8390-95 feet it flowed at the rate of 10 barrels of 43.3 gravity oil per hour through a ¼-inch choke on drill stem test, but also made about 5 percent salt water. Working pressure was 2100 pounds, and the perforations were squeezed.

Hardin County: Houston Oil Company & American Republics Corporation has made an excellent producer in the latest test in the Beech Creek field, the H&TC Fee 10. Flowing for 15 hours through a ¼-inch choke from perforations at 6272-75 feet, it produced 395 barrels of 34.3-gravity oil under tubing pressure of 725 pounds with gas-oil ratio only 153 to 1. This is the third well for the field, the first having made 273 barrels of crude in 24 hours through a ¼-inch choke, and the second having made 103 barrels of condensate daily from perforations at 6295-6315 feet.

Houston and American's Hardin County School Land Fee 2, deep test 1¼ miles southerly from the discovery well at Village Mills field, is drilling below 8974 feet in hard shale after having reported gas-condensate showings in core at 8968-69 feet.

Washington County: Magnolia Petroleum Company has abandoned Nettie Anderson 1, deep test at Clay Creek a mile north of Independence, after drilling to 8212 feet.

Brazos County: Phillips Petroleum Company's Fannie Schoeps 3, the Gulf Coast's deepest well, is below 15,186 feet, still drilling.

Morton T. Higgs Named Gulf Coast AIMME Head

Morton T. Higgs, Houston division manager of Lane-Wells Company, was named chairman of the Gulf Coast section of the American Institute of Mining and Metallurgical Engineers at a Houston meeting February 14.

He succeeds I. W. Alcorn, Houston division engineer for The Pure Oil Company. W. E. Hubbard, Houston, proration officer for Humble Oil & Refining Company, was named vice chairman, and Alexander Deussen, Houston consulting geologist and geophysicist, was reelected secretary-treasurer. New directors named were Sidney Judson and Harry C. Spoor, both of Houston.

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South Louisiana

Accelerated Program of Drilling Is Indicated

Accelerated drilling program for southern Louisiana indicated by the number of new locations.

St. Charles Parish: Humble Oil & Refining Company's Sarpy Bros. 1, Good Hope field, has been completed as a good producer in the regular field sand. The well had drilled to 10,147 feet and set casing for tests in deeper sands, none of which were thought to be of commercial value in this well. Casing had been perforated at 7841-44 feet for completion, and it flowed 243 barrels daily through a 5/32-inch choke with tubing pressure 1100 pounds and gas-oil ratio 586-1. Gravity of oil is 36.3 degrees.

Assumption Parish: Tide Water Associated Company et al's Amanda Lussier 1, Napoleonville area, is standing cemented after another squeeze job on perforations at 10,274-276 feet and 10,248-250 feet. It had recovered salt water in testing at 10,373-375 feet, and will now probably test the upper sand.

St. James Parish: New tests are to start in the Lapice field and at Vacherie. In the Lapice area, Shell Oil Company has made location for Schexnayder 4 on pooled acreage in 38-15s-15e, which will drill to 10,500 feet, and R. T. McDermott has made location for Realty Operators 7, an 8500-foot well for the Vacherie field, in 17-12s-17e.

Jefferson Davis Parish: Stanolind Oil & Gas Company's W. H. Tupper 1, in the South Elton field, is still drilling, now at 8925 feet in shale, and has reported no further showings, since it tested 24 stands of oil at 8070-87 feet.

In the Hayes area, Gulf Refining Company's Lacassine Company A-1 is drilling at 7537 feet in shale.

In the West Tepetate area, Barnsdall Oil Company et al's Joseph Fuselier 3 is waiting on cement after having set the 7-inch casing to total depth of 9312 feet. It will test both of the field's producing sands.

Vermilion Parish: Humble Oil & Refining Company, with 1 well now drilling below 10,000 feet in the Pecan Island field, has made location for another test, scheduled to 12,000 feet. The Louisiana Furs, Inc. 6, will be in Twp 16s-1e, just 7150 feet southeasterly from well No. 3 and 4950 feet southwest of Louisiana Furs 1.

Humble's Louisiana Furs 5 is drilling below 10,135 feet in hard shale.

St. Martin Parish: Gulf Refining Company's St. Martin Land Company D-2, on Sec. 28 Dome, was preparing for a new test with casing perforated at 11,256-272 feet, after having recovered oil and salt water on the latest test, taken with perforations at 11,390-398 feet.

In the St. Martinville area, Continental Oil Company & Standard of Kansas' Liquidators 1, on the north flank of the dome, was preparing to run electric log after drilling to 11,428 feet. Gas sand had been reported at 9672-9740 feet.

☆

MONROE H. GOODE, 50, former vice president of the Marland Oil Company of Texas and in recent years an independent lease buyer, died February 11 of gunshot wounds at his Dallas residence.

Something to think about!

John W. Scoville, economist for Chrysler Corporation, had this to say in Barron's for January 29th: "Can the government create greater prosperity and help the people to produce and exchange? Yes. By repealing every law to regulate trade, wages, prices and employment and by restoring economic freedom." Right or wrong, that is something to think about for the post war period. Some of the buyers who TRY PELCO FIRST have been coming around for 37 years. They remember, as we do, that when law and order was the chief function of government everybody seemed to get along pretty well. For instance there was no income tax—millions of bureaucrats had not yet discovered they could get a free ride.

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North Louisiana

Delhi Field's Second Producer Is Completed

New wildcat work getting under way far outweighs the failure reported; possible new field indicated in Rapides Parish on basis of oil showings; Delhi field being thoroughly explored.

Richland Parish: The Delhi field's second producer was completed flowing 252 barrels of 41.8-gravity oil per day through 5/32-inch choke on tubing. The J. E. Holt B-1, C SE NE 21-17n-9e, is operated by Charles Murphy, Jr., and Sun Oil Company. Production is from the Tuscaloosa in perforations at 3242-47 feet, where first perforations were squeezed to reduce a high gas-oil ratio. Depth is 3402 feet.

Roger Lacy finaled B. May 1, C SW NW 26-17n-9e, 1¾-mile extension to the field for 249 barrels daily through 12/64-inch choke on tubing. Production is from Tuscaloosa through perforations opposite 3462-70 feet. The well is reported 110 feet lower on the gas rock than the discovery. It is now shut in for tanks.

Murphy and Sun have staked Ella M. Barrier 3, C SE SW 22-17n-9e, a diagonal southeast offset to Barrier 1, now waiting on cement for completion tests. Barrier 2 in moving in rig. Gulf Refining Company staked location for D. G. Hoover 1, SE SE NW 21-17n-9e, diagonal northwest offset to the discovery, and expects to begin work this week.

Rapides Parish: Louisiana Land & Exploration Company is reported to have logged sand at 7250 feet that indicated possibility of a new oil field in J. A. Bentley A-2, 36-5n-5w, where the operator has 55,000 acres from the Bentley Trust under lease in this area.

Lincoln Parish: Big West Drilling Company abandoned N. B. Gill Estate 1, C NW SE 35-20n-2w, which was carried to 9950 feet without commercial showings. Cotton Valley was topped in electrical survey at 7263 feet.

Caldwell Parish: Shell Oil Company made only 2 reported feet of hole in Louisiana Lumber Company 1, SW SW NW 31-15n-3e, deepest drilling wildcat in the state, and now at 11,477 feet in shale. Though information is being withheld, the report continues that oil and gas indications were found in sand below 11,400 feet. Gas production was indicated in September, when the well blew out of control, and was presumed to be from the Cotton Valley, though there was open hole from 6514-10,141 feet, which was its total depth then.

Madison Parish: Sohio Petroleum Company's H. Harper 1, 2-16n-13e, is drilling below 6590 feet.

Woodley Petroleum Company will begin work immediately on a newly staked wildcat, Montgomery 1, C NW SE 14-15n-9e, 12 miles southeast of the Delhi field. It will be a 6000-foot test.

Franklin Parish: American Liberty Oil Company's second attempt to discover new production in this county is under way at J. B. Kny 1, NW NW 12-16n-8e, a scheduled 3800-foot wildcat. This test is less than ½-mile north of the company's J. E. Holt 1, recently abandoned at 3404 feet, which logged sand with salty taste from 3232-58 feet.

Arkansas

Another Union County Wildcat Reported Failure

Another Union County wildcat reported a failure, with activity in that area decreasing; one wildcat location and 4 field locations made.

Union County: Kerlyn Oil Company abandoned Church 1, SW SW SE 22-19s-11w, at 4016 feet. C. H. Murphy's C. H. Murphy 1, 4-19s-15w, is drilling below 3200 feet.

Cleveland County: E. E. Moore is rigging up rotary tools for Victor Moore Estate 1, C SW NE 28-9n-10w, a 4500-foot wildcat test 4½ miles southeast of Rison townsite.

Pope County: Stanolind Oil & Gas Company is rigging up rotary tools and will resume drilling in B. G. Maxwell 1, C SE SE 18-8n-18w, Arbuckle lime wildcat that has been drilling by cable tools many months. The hole is at 4637 feet, where drilling was suspended while rigs were changed. There have been no showings of commercial production.

Van Buren County: Lion Oil Refining Company's Griggs 1, NW SE 23-10n-13w, is drilling below 4650 feet.

White County: O. W. Killam and L. O. Millan's J. C. Curl 1, C NE SW 10-9n-5w, was drilling at 4800 feet.

Columbia County: One of 4 field tests staked last week was in the West Atlanta field, which likely will have a steady development program this year. Skelly Oil Company is moving in material for the new test, Sallie Ferguson 1, C SW NW 18-18s-19w. Lion Oil Refining Company has started Holland 1, in NE NW of Sect. 18, and both wells may prove extensions to the field. Tide Water Associated Oil Company's Ferguson-Shinn 1, SE NW 18-18s-19w, officially completed January 1, flowing 150 barrels in 24 hours through 8/64-inch choke on tubing from perforations opposite the Smackover at 8283-87 feet, is understood to have logged the porous section high enough to indicate possibility of another high to the west with a connection between.

Richard M. Young, Former Carter President, Dies

Richard Mather Young, 68, former president of The Carter Oil Company, died in Tulsa February 11. A native of Ironton, Ohio, he entered the oil business in 1933 as a bookkeeper for Prairie Oil & Gas Company.

Richard M. Young

Young went to Tulsa in 1917 with The Carter Oil Company and was named vice president and general manager the following year. He was elected president of the company in 1926 and in 1927 was made a director of Standard Oil Company of New Jersey. He continued as president of The Carter Oil Company until his retirement in 1932.

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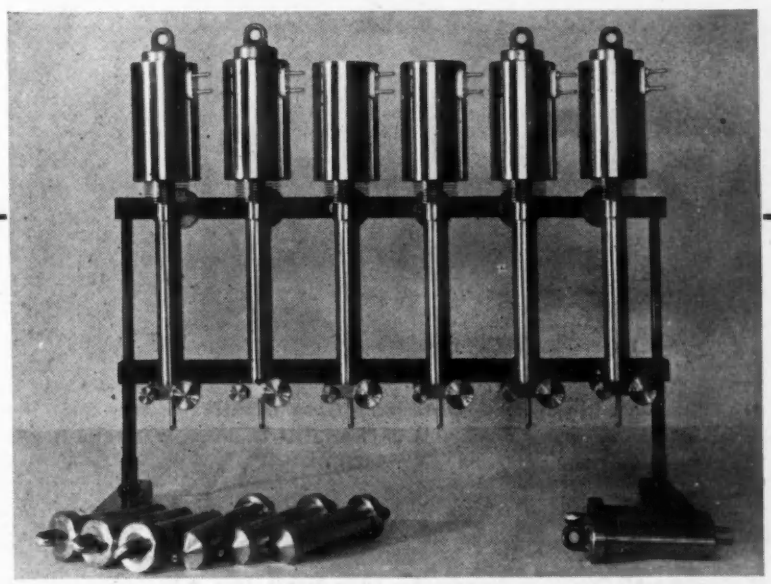

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Southeastern

Oil, Water Shown in Test Of Mississippi Wildcat

Oil and water shown in preliminary test of Marion County wildcat; Gulf recovers oil and water in Jasper County well; other important tests drilling.

Marion County: Humble Oil & Refining Company's A. Evans 1, wildcat southeast of Columbia, was preparing to reperforate for another test following a squeeze job at 9121-23 feet to get more cement behind the casing. On a previous test it had perforated at 9127-29 feet for a drill stem test, open 32 minutes, which recovered 360 feet of 38-gravity oil, 500 feet of drilling mud, and 540 feet of brackish water. Tests are being made in the Tuscaloosa, but above the Massive section which contained water.

Gulf Refining Company was scheduled to spud last week in its Bradshaw 4, next test for Keno dome area in southeastern Marion County.

The California Company has considerable acreage northwest of Humble's test and is reported preparing to make a location about 3 miles from the Humble Evans well.

Clarke County: Kirby Petroleum Company's Long Bell Petroleum Company A-1, in the recently opened Langsdale area, was setting casing after having drilled to 3790 feet, and is reported to have found sand conditions favorable. The company plans continued development in the area to define producing limits.

Claiborne County: Danciger Oil & Refining Company's Claude Taylor 1, in the St. Elmo area, was running electric logging survey after drilling to 9512 feet in the Marine Tuscaloosa and probably will take some side wall samples. It will then core to the Massive sand. No showings have been indicated so far in this well.

The Pure Oil Company's A. L. Chapman 1, new test for the Port Gibson area, scheduled to 10,500 feet as a Tuscaloosa test, is moving in materials. Location is in 13-11n-3e.

Jefferson Davis County: Gulf Refining Company has made location for Sarah Griffith 1, outpost a mile southeast of Mullins 1, which opened first oil production in the Gwinville area, and is expected to start work soon.

Humble Oil & Refining Company's N. B. Dale 1, on the Carson Salt Dome, in 24-7n-18w, and second test for the company in the area, is drilling ahead in solid salt at 3587 feet, after having picked up top of salt aroung 3000 feet.

Jasper County: Gulf Refining Company's Edwards-Bailey Unit 1, expected to prove production on the Soso prospect in the southwestern part of the county, is shut down on account of high water after the latest test at 7823-26 feet showed 50 percent oil and 50 percent water. The test at 7828-34 feet recovered 30 percent oil and the rest salt water.

Two miles northwest of production in the Heidelberg field, Sinclair Wyoming Oil Company's W. A. Bethea 1 is drilling below 5848 feet in shale, headed for the Tuscaloosa horizon after having reported oil showings in the Eutaw which might indicate production. Production in this well from the Eutaw probably would prove up another 800 to 1000 acres.

Issaquena County: The California Company's Mississippi Alluvial Farms 1, in the northeast quarter of 34-12n-8w, is drilling below 8540 feet, where it is believed in the Smackover lime, topped at 7999 feet. There were some showings in the upper part of this formation, but opinions vary as to whether they were of commercial importance.

Florida

A wildcat was started in Santa Rosa County as Hunt Oil Company began moving in materials for P. R. Miller Mill Company 3, C SE SE 8-5n-28w, scheduled deep test.

Humble Oil & Refining Company was drilling at 6162 feet in lime in Gulf Coast Realties 4, 20-48s-30e, Collier County. Its State 1, C NE NW 30-55s-36e, Dade County, was in lime at 11,449 feet. Humble's third wildcat, G. C. Carleton Estate 1, C SW NE 34-38s-29e, was in broken lime at 1782 feet.

The Pure Oil Company's deep wildcat, Hopkins 2, C NW NW 21-6s-9e, was drilling in shale and lime at 3922 feet.

Alabama

Glen Rose was testing Z. A. Boshell 1, 100 feet north of center NW NE 18-12s-8w, Winston County, and recorded 2½ million cubic feet of gas in 2½ hours after acidizing with 3000 gallons. The well is at 2004 feet, and has had slight shows of oil at 695 feet and a show of gas at 1830 feet.

J. T. Parks has had indications that Hobson 1, C SW NE 9-8n-2w, Washington County, is running structurally

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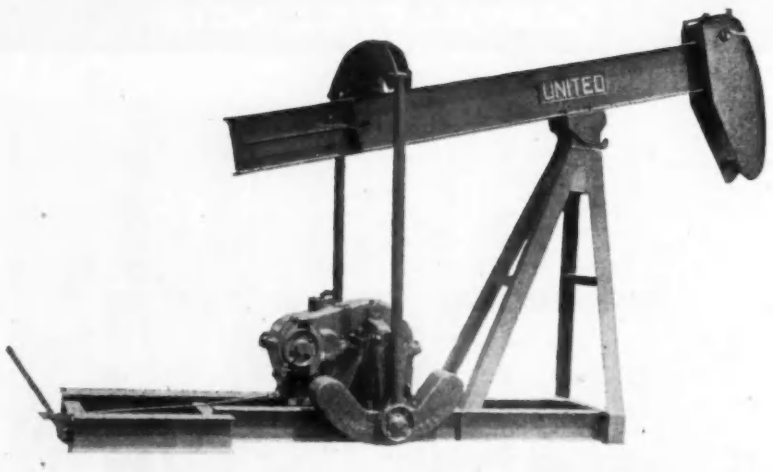

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higher on the Selma than a well in 15-9n-2w. Hobson 1 topped the Selma at 1553 feet, and is drilling below 1570 feet.

H. L. Hunt's Scruggs 2, 33-11n-4w, Choctaw County, drilled plug and was running tubing to test at total depth of 3489 feet.

Michigan

Mecosta County Test Is Rated Horizon Discovery

Sun Oil Company's Denslow 1, S½ SE NE 2-16n-8w, Fork field, Mecosta County, is rated as a new horizon discovery and the year's leading development. Perforated with 97 shots in Richfield dolomite from 4993 to 5025 feet, the well gauged 984,000 cubic feet of gas and had a show of distillate and light oil. It was acidized with 1000 gallons and on a 5-hour test through tubing it averaged 10 barrels of light green 54.8 gravity oil and gauged 3,365,000 cubic feet of gas.

Color of oil may have been affected by treating oil. The well showed 1850 pounds shut-in tubing pressure and after 5-hour open test pressure came back to 1200 pounds in one-half hour. Well is located on northwest flank of field and was deepened after original Dundee objective at 3850 feet was tested dry. It is the first test in the field to penetrate the Lower Monroe or Detroit River section.

Huron County: C. W. Teater's Ignash 1, SE SE SE 21-18n-13e, Dwight Township, wildcat, is testing a Monroe oil show at 2860-66 feet.

Bay County: Shell Oil Company's Bis 1, SW NW NE 2-16n-4e, east offset to Shell's Pinconnin discovery, failed to show Dundee pay at 2920 feet, 94 feet in horizon, indicating third offset failure to discovery well.

Lease Auction: Conservation Department leased 17,957 acres of wildcat state-owned land for total bonus of $16,633 to average 94 cents per acre. High bid was $7.60 an acre.

Rocky Mountain Area

Stanolind to Operate Elk Basin Oil Field

Stanolind Oil & Gas Company has been chosen to operate the large Elk Basin field in Park County, Wyoming, and Carbon County, Montana. This agreement was arrived at after a year's cooperative engineering study of reservoir conditions and production regulation by the companies controlling acreage in the field. Other companies entering the Unit agreement, covering all of the expected productive area, include The Carter Oil Company, The Ohio Oil Company, MacKinnie Oil & Drilling Company, Continental Oil Company, Phillips Petroleum Company, and Sinclair Wyoming Oil Company.

Final approval of the Unit agreement is expected to come from the Department of the Interior soon and the exact percentages of participation by the 7 companies will be revised as continued drilling enlarges the proven productive area.

Indicated possible productive acreage in Elk Basin field is approximately 4500 and the estimated possible maximum oil reserves as of January 1, 1945, is 127 million barrels. The field is now yielding, under restrictions, a daily average of from 5000 to 10,000 barrels from 76 wells on a one to 40-acre spacing pattern. The drilling program for this year calls for an additional 30 wells.

Aerial Photos Used in Winter Exploratory Work

Many major oil companies in the Rocky Mountain area are making use of aerial photographs covering large areas, especially in Wyoming.

Most of the larger exploratory companies increased the personnel of their geological departments last summer and with present winter weather hindering the work of doing surface geology in the region, many are obtaining structural evidence in the office by examination of these aerial photographs. In some cases the results obtained have been of sufficient merit to cause the companies to commence leasing the areas as protection and when the weather conditions improve, the prospects will be checked by geological surface parties and geophysical crews.

☆

EDWARD G. KADANE, official of G. E. Kadane & Sons, Wichita, Falls, has been elected president of the North Texas Oil & Gas Association, succeeding John W. Thomas. J. P. Coleman and Fred Sehmann were retained as vice president and executive vice president, respectively.

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California

Gassy Oil Recovered on Test in Kern County

Kern County test abandoned; oil, gas recovered on General Petroleum test; Fresno County wildcat staked.

Kern County: Western Gulf Oil Company's Foster 1, in 17-28-28, was abandoned February 4. Total depth is 3987 feet in gray sand. Top of Vedder was placed at 3650 feet.

General Petroleum Corporation's Kernway 1-44 in 1-29-26, with depth at 5050 feet plugged back to 4908 feet, on a test at 4825-4908 feet, open 31 minutes, recovered 824 feet of gassy oily mud, 1405 feet of gassy oil and 648 feet of salt water. The operator will set casing on plug and gun-perforate for production.

Fresno County: Standard Oil Company was grading location for Griffin 74-18, wildcat test, 2310 feet south and 990 feet west from northeast corner of 18-16-16.

Santa Barbara County: Union Oil Company's Acquistapace 1, in 22-10-34, is deepening in the Franciscan formation. Depth is 4370 feet. Bradley Lands 1-12, in 25-10-34, was completed February 4, pumping 440 barrels per day, 13.8 gravity, 1.0 cut. Depth is 5250 feet with 8⅝-inch shutoff at 4160 feet.

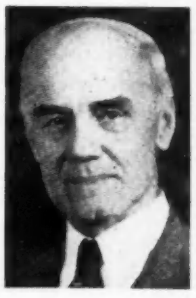
Solano County: Amerada Petroleum Corporation's Church 1, in 35-5n-2e, was abandoned February 5. Last production test attempt on the interval 4605-4660 feet was a packer failure.

Sonoma County: Leonard A. Gregory has staked Bettinelli 1, 1503 feet westerly from the southwest corner of lot 334, Petaluma Rancho, thence 132 feet northerly at right angles in 29-5n-6w.

Ventura County: Los Nietos Company's L. B. H. 1, 22-3-21, tested wet on shutoff test of the 7-inch casing cemented through perforations at 4490 feet and is standing recemented.

W. C. Norris, Pioneer Manufacturer, Succumbs

Services for W. C. Norris, president and founder of W. C. Norris, Manufacturer, Inc., of Tulsa, and a pioneer manufacturer of oil field equipment, were held January 24 in Washington, D. C.



W. C. Norris

Norris was born in Glenn Falls, New York, on December 19, 1861, and started an oil field tool and equipment business in Tiona, Pennsylvania, before he was 21 years old.

He moved to Tulsa in 1910 and founded his company with a crew of ten men. By 1943, nearly 900 persons were in his employ in seven cities. In 1943 the Norris Company was presented with the Army-Navy E pennant, the first Oklahoma firm on prime contract work to be given such an honor and the fourth in the eight-state St. Louis ordnance district.

In recent years Norris had resided in Washington. He was a member and trustee of the Holy Family Cathedral. Survivors include three daughters, Mrs. Don S. Bowers and Mrs. W. D. Barry, Jr., both of Tulsa, and Miss Madolin Norris of Washington; and three brothers, Frank and Dan Norris of Robinson, Illinois, and Ray Norris of Warren, Pennsylvania.

Secretaries Organize

The Oil Secretaries Association of Wichita, Kansas, is an organization of secretaries to oil men, which has 126 members. The association was organized six years ago by a group of girls employed in offices of some of the major companies and independent operators.

Officers include: Delphine Miller, Magnolia Petroleum Company, president; Eloise Russell, vice president; Frances Leslie, Tidewater Associated Oil Company, secretary; Frances O'Brien, Stanolind Oil & Gas Company, treasurer; Margaret Steward, Argo Oil Company, assistant secretary-treasurer.

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PAGES 3079 THRU 3098
IN THE 1943-44
COMPOSITE CATALOG

WESTERN CANADA

Jumping Pound Discovery Followed Up by New Test

Shell follows up Jumping Pound discovery; Conrad Ellis pool has 3 producers; best producer completed in East Side Limestone of North Turner Valley; Sullivan Creek structure tested.

Shell Oil Company of Canada, following up its Jumping Pound discovery of December, has staked site for a deep test on the West Flank of the Anticline whose crest contained wet gas in large volume. The new well, Shell 10-14-J, is to be drilled in the center of Lsd 10 14-25-5w5th, ⅝ mile southwest of the 4-24-J discovery wet gas well. Fuel gas will be supplied from the discovery well. Steam-powered rotary will be used.

The 4-24-J, completed 329 feet in the Madison limestone at 9947 feet, showed a flush after acidization estimated at more than 15 million cubic feet daily. Under light back pressure, the well made 13.5 million cubic feet of gas and 95 barrels of light oil with a gravity range between 46.5 and 54.5 degrees. Formation pressure, calculated at 9740 feet in a 24-hour closed buildup, was recorded at 3910 pounds.

Should the West Flank test—as was the case in the Turner Valley field 20 miles south—yield oil in large volume, Shell is expected to embark on a large-scale development program on this flank, the East Flank and the North and South Plunges of the structure. Completion of the 10-14-J is expected in mid-summer.

Mid-Continent Oil & Gas Company and East Crest Oils Ltd., independent western Canadian operators, have joined forces to drill a mile north of the Conrad Ellis sand pool discovered by Standard Oil Company of California last summer. The pool now has 3 producers, ranging from 100 to 175 barrels of 25.6 crude daily. The new test, Mid-Continent-East Crest 1, will be drilled immediately in the southeast 10 acres of Lsd 2 8-6-15w4th, a mile north and ¼ mile west of Standard's discovery well.

Foothills Oil & Gas 20 has been completed as the best producer to date in the East Side Limestone of North Turner Valley. Following a series of acid treatments totalling about 8000 gallons, the well flushed 100 barrels hourly. Restricted to a 5/16-inch choke and running under strong back pressure, the well was making about 260 barrels daily last week, with gas-oil ratio of only 700 cubic feet per barrel.

Phillips Petroleum Company (Oklahoma) reports the Madison Limestone at its Sullivan Creek 1, wildcat in the Alberta Foothills southwest of Turner Valley. The lime was reached at 1932 feet. Drilling has been halted at 1975 feet, and 10¾-inch casing was being set at 1940 feet, preliminary to drilling into the Madison. Ground elevation at the site is about 5050 feet, placing lime elevation about 3118 feet above sea level.

Initial test on the Sullivan Creek structure . . . Sullivan Creek Syndicate 1 . . . topped the Madison at 2375 feet, showed just over 500,000 cubic feet of gas at 2850 feet and was suspended in the Madison at 3590 feet. Ground elevation was about 5000 feet, placing lime elevation about 2625 feet above sea level, or about 493 feet lower than the Phillips venture, which is 4¼ miles north and 1¾ miles west.

Errata

In the articles dealing with "Water-Injection Wells and Their Behavior" (S. T. Yuster and J. C. Calhoun, Jr.) published in THE OIL WEEKLY December 18 and 25, 1944, equations shown below should appear as follows:

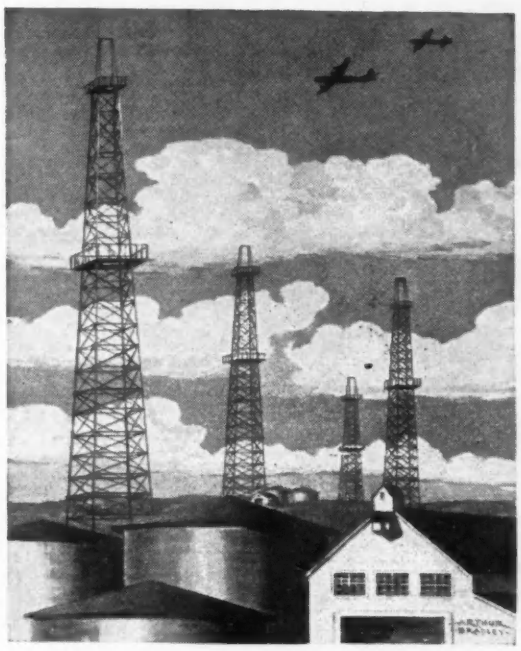
$$(11)\quad \frac{4kPt}{\eta F r_w^2 (1-S_r-w)} = 1 + \left(\frac{4\pi khP}{\eta Q} - 1\right) \rho \frac{4\pi khP}{\eta Q}$$

$$(11a)\quad \frac{.0253kPt}{\eta F r_w^2 (1-S_r-w)} = 1 + \left(\frac{.0142khP}{\eta Q} - 1\right) 10 \frac{.00617khP}{\eta Q}$$

$$(17)\quad Q_o = \frac{0.00154\, khP}{\eta(\log_{10}\frac{W_1}{r_w} + 0.342C - 0.798)}$$

$$(28)\quad q = \frac{0.00271\, nkhp}{\eta(\log_{10}\frac{W}{r_w} - 0.420)}$$

$$(29)\quad H.P. = \frac{4.6 \times 10^{-8}\, nkhp^2}{\eta(\log_{10}\frac{W}{r_w} - 0.420)}$$



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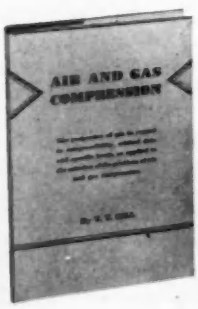

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U. S. Exploratory Completions

ARKANSAS WILDCATS

Union County—Failures: Marine Oil Co.'s L. O. McGough 1, c ne nw 34-17s-13w, elev 195 ft, Cotton Valley 4012 ft, Buckner 6120 ft, sw and gas in perfs 3564-70 ft, abnd 6331 ft.

Kerlyn Oil Co.'s Church 1, sw sw se 22-19s-11n, elev 140 ft, abnd 4016 ft.

GEORGIA WILDCAT

Atkinson County — Failure: Sun's Doster-Ladson 1, ld lot 71, lad dist 7, cap rock 3300 ft, abnd 4296 ft.

ILLINOIS WILDCATS

Clay County—Discovery: Texas Co.'s Jones 1, se se nw 18-5n-5e, McCl 2498-2505 ft, pump 12 bbls, td 2505 ft.

Jefferson County — Failure: Oil Management's Hail 1, nw sw ne 29-1s-1e, abnd 2357 ft.

Lawrence County—Failure: Big Chief Drlg.'s Fiscus 1, nw nw sw 32-3n-13w, abnd 2897 ft.

Madison County—Failure: T. T. Eason's Frey 1, sw se nw 23-3n-6w, abnd 1912 ft.

Montgomery County—Failure: Walter Vette's Hardt 1, sw sw nw 27-9n-5w, abnd 683 ft.

Richland County—Failure: Kingwood Oil et al's Klingler 1, nw nw nw 31-5n-9e, abnd 3179 ft.

INDIANA WILDCATS

Gibson County—Failure: F. R. Grumme's Louisville Joint Stock Bank 1, ne nw ne 28-1s-10w, abnd 1706 ft.

Steuben County — Failure: Texas Co.'s E. Tuttle 1, nw nw ne 27-36n-13e, abnd 2504 ft.

KANSAS WILDCATS

Barton County—Failure: Stanolind's Radke 1, ne nw nw 6-16s-14w, Lans 3128 ft, Arb 3413 ft, abnd 3457 ft.

Douglas County—Discovery: J. M. Huber's Community 1, nwc 33-12s-20e, flow 100,000 gas, td 1797 ft, pb 674-94 ft.

Ellis County—Discovery: Max Cohen's Madden 1, nwc ne 4-13s-17w, 106 bbls 28-gr, Arb 3613-18 ft, td 3618 ft.

Ford County—Failure: Texas Co.'s Thomas 1, se ne nw 33-27s-23w, Arb 5917 ft, abnd 6152 ft.

Graham County—Failure: D. J. Hansen's Hansen 1-B, sec 23-6s-21w, Arb 2760 ft, abnd 3810 ft.

Pawnee County—Failure: J. M. Huber's Galliart 1, nec 31-22s-15w, Arb 4031 ft, abnd 4042 ft.

Phillips County—Failure: Skelly's Thayer 1, sec ne 34-5s-19w, Arb 3485 ft, abnd 3503 ft.

Pratt County—Failure: Paul Hatfield's Bryant 1, ne sw se 31-27s-15w, Miss 4619 ft, Vi 4742 ft, abnd 5000 ft.

Rice County — Failure: Mid-States et al's Kasperek 1, sw sw nw 13-18s-6w, Miss 3407 ft, Misener 3795 ft, Vi 3869 ft, Simp 3911 ft, Arb 3966 ft, abnd 4003 ft.

Rush County—Failure: Helmerich & Payne's Snyder 1, swc 18-18s-14w, Arb 3522 ft, Basal 3726 ft, abnd 3731 ft.

Russell County—Failure: Coralena Oil's Alley 1, se sw ne 29-14s-15w, Arb 3282 ft, abnd 3294 ft.

KENTUCKY WILDCAT

Henderson County — Failure: Ashland & Basin's Gaines 1, 14-P-21, abnd 2800 ft.

SOUTH LOUISIANA WILDCAT

Beauregard Parish — Oil Discovery: Magnolia's Lutcher-Moore Lbr. Co. C-1, 1980 n 660 w of sec se¼ 24-5s-12w, perf 24 shots 11,343-50 ft, acidized, flow 14 bbls, 8/64-in, gor 750/1, td 12,640 ft.

MICHIGAN WILDCATS

Kent County—Failure: Three A Dr. Co.'s W. Davvison 1, nw nw se 31-5n-9w, Traverse li, abnd 2256 ft.

Midland County — Failure: Wicklund Dev. Co.'s Wetherell 1, nw sw ne 15-14n-1e, Dundee 3678 ft, abnd 3854 ft.

Montcalm County — Failure: Columbia O&G Co.'s Playmour 2, ne ne ne 13-10n-7w, Dundee li 3245 ft, abnd 3335 ft.

Oceana County—Failures: Skelly's Vanderleest 1, sw sw sw 28-14n-15w, Dundee 2584 ft, abnd 2737 ft.

Fisher-McCall's Bahr 1, nw nw ne 6-16n-16w, abnd 1735 ft.

Wexford County—Failure: Ranch Oil Co.'s Browning 1, s½ se se 11-23n-11w, Dundee li 3046 ft, abnd 3210 ft.

MISSISSIPPI WILDCATS

Madison County—Failure: Carter Oil Co.'s Alfred Howard 1, sw nw 31-11n-4e, elev 290 ft, Wilcox 1225 ft, Midway 3150 ft, Calyton 3953 ft, Selma 4020 ft, Eutaw 4962 ft, Wilburn 4986 ft, abnd 5130 ft.

Marion County—Failure: Gulf's R. H. Bradshaw 3, c se nw 29-3n-17w, elev 233 ft, Wilcox 3343 ft, Midway 6346 ft, Chalk 7084 ft, Austin 8071 ft, Tuscaloosa 8570 ft, abnd in shale 9622 ft.

MONTANA WILDCAT

Toole County—Failure: Texas Co.'s First Nat. Bnk. Mpls. 1, se se nw 11-34n-1e, Kippen area, sulphur wtr, in Madison, abnd 1749 ft.

NEBRASKA WILDCAT

Cherry County—Strat Test: Sinclair Prairie's Monchan Cattle Co. 1, nw ne 23-25n-35w, abnd 4256 ft.

NEW MEXICO WILDCATS

Eddy County — Failure: Harvey E. Yates-Bay Pet. Corp.'s Miller 1, c nw ne 28-19s-31e, elev 3523 ft, salt 610-2035 ft, li 2175 ft, Yates 2260 ft, abnd 2426 ft.

Lea County—Failures: Atlantic's Stevens 1, c ne ne 33-14s-33e, elev 4214 ft, anhydrite 1510 ft, base salt 2525 ft, Yates frosted 2600 ft, brown li 2680 ft, Queen sd 3410 ft, Grayburg 3900 ft, San Andres 4110 ft, Glorietta 5690 ft, Abo 7790 ft, abnd 8245 ft.

Stanolind's State 1-O, c ne se 21-18s-34e, elev 4032 ft, anhydrite 1839 ft, salt 2003-3140 ft, brown li 3520 ft, red sd 4510 ft, abnd 5612 ft.

OKLAHOMA WILDCATS

Greer County—Discovery: E. M. Thomasson's Craig 1, nw se se 3-6n-21w, pump 10 bbls 36-gr, Gr wash 607-32 ft, td 635 ft.

Kay County — Failure: Max Cohen's Fassnacht 1, sw ne sw 24-29n-2w, Simp 2095 ft, abnd 4118 ft.

Lincoln County—Failure: Morgan Oil et al's Garrett 1, nw nw nw 34-16n-4e, Miss 4300 ft, abnd 4802 ft.

WEST TEXAS WILDCATS

Andrews County—Failure: Frontier Fuel Oil Corp. et al's University 1-A, c nw nw sec 35, blk 13, elev 3256 ft, anhy 1810 ft, Cowden anhy 2610 ft, San Andres 4550 ft, San Angelo 5840 ft, Clear Fork 6170 ft, Tubb zone 6785 ft, abnd 7600 ft.

Crane County—Failure: Gulf's W. D. Harris 1-A-E, c e¼ of w¼ H&TC Ry. 7, blk 6, elev 2329 ft, anhydrite 430 ft, Yates 1190 ft, brown li 1880 ft, San Andres 2070 ft, Ellenburger 5272 ft, abnd 5285 ft.

Kent County—Failure: Union of Cal.'s Wallace 1, c nw sw W&NW Ry. 97, blk G, abnd 479 ft.

Scurry County—Failure: Richfield Oil Corp.'s Dodson 1, c se ne H&TC Ry. 579, blk 97, elev 2786 ft, li 2240 ft, abnd 3855 ft.

WEST CENTRAL TEXAS WILDCATS

Coleman County—Failure: Wm. R. Moss et al's Moss 1, 960 snl 1120 ft ewl Toyah Creek Irrigation Co. sur 70, abnd 2092 ft.

Hamilton County — Failure: Sonac - Texas O&G Corp.'s McCallum 1, 50 ft n 330 ft w of swc of I. A. Jacobs sur, but in W. R. Newton sur, li 3125 ft, Barnett shale 3504 ft, Ellenburger 3618 ft, abnd 3846 ft.

Taylor County — Failure: Coke Lupton-Jerome McLester-Ungren & Frazier's James & McGee 1, 2310 ft snl 330 ft ewl T&P Ry. 23, blk 16, elev 1735 ft, abnd 2495 ft.

WEST CENTRAL TEXAS NEW PAY TESTS

Jones County—Alexander Fld Failure: Cardinal Oil Co.-J. P. Byram's Alexander 10, 3320 ft snl 2340 ft ewl T&P Ry. 3, blk 14, elev 1597 ft, Dothan 1320-47 ft, base Saddle Crk 1669 ft, Flippen 1720 ft, abnd 2106 ft.

Stephens County—Failure: Consolidated Oil Co.-Premier Oil Ref. Co.'s Correll 1, 2200 ft nsl 647 ft ewl G. Newton sur A-128, abnd 4760 ft.

SOUTH CENTRAL TEXAS WILDCAT

Lasalle County—Failure: W. C. McBride's Mrs. Loma Pugh et al 1, 330 fr n&wl blk 12, 2214-ac lse, E. L. Garrett sur 93, abnd 843 ft.

SOUTHWEST TEXAS WILDCATS

Starr County—Failure: George H. Echols' Starr Co. Cattle Co. A-2, 660 fr n&el blk 33 Jefferies subdvn 660 fr wl porc 89, 40-ac lse, elev 330 ft, abnd 3110 ft.

Webb County—Failure: Phillips' A. M. Bruni Est. B-1, (Leyendecker) 3775 fr nel 1558 fr nwl 2000-ac lse, J. V. Borrego Gr, abnd 5310 ft.

LOWER TEXAS COAST WILDCATS

Brooks County—Failure: Texas Co.'s Mary M. Lasater 2, 3300 fr nl 1980 fr sl 2600.8-ac lse Francisco Grerra Chapa Gr, Burton & Danforth subdvn of Parrita Rch sect 6, abnd 8300 ft.

Live Oak County—Oakville Wilcox Oil Discovery: Henderson Coquat's L. A. Reagan 3, 1162 fr swl 1415 fr nwl 2500 fr sel 306-ac lse, S. McGloin sur, perf 6900-ft sand, shut in gas well, no gge, td 6959 ft.

San Patricio County — Failure: Henshaw Bros.-Coastal Ref.'s Florence B. Haworth 1, 330 fr se&swl 129-ac lse, Cubbage & Miller subdvn O'Connor rch sect 30, abnd 6415 ft.

Victoria County—Failure: Wright Dr. Co.'s E. B. Furhman 1, 330 fr sly nl 330 fr wl 477-ac lse, Valentine Garcia Lge 45, abnd 5833 ft.

TEXAS GULF COAST WILDCATS

Brazoria County—Failure: Gulf's S. M. Allen

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■ Geologist with southwestern field and subsurface experience, doctorate; desires responsible position in domestic or foreign exploration. Address: Box 5, c/o The Oil Weekly, Houston, Texas.

et al 2, 5460 fr el 1701 fr sl Sterling McNeil sur A-94 and sect 67, 7253.8-ac lse, Allen dome area, abnd 12,667 ft.

Harris County—Failure: Sun's W. S. Swilley et al 1, 18,129.6 fr wl Victor Blanco 5-Lge Gr 993 fr nl 2795-ac lse, abnd 9538 ft.

TEXAS GULF COAST NEW PAY TESTS

Brazoria County — Old Ocean Discovery: Magnolia - Abercrombie's B.R.L.D. C-1, (OWWO) start s cor David McCormick sur go 4436.6 ne alg sel th 2488 se at ra, elev 19.75 ft, perf 96 shots 10,800-820 ft, flow 292 bbls 48.2-gr, ¼-in, gor 34,962/1, tp 3600 lbs, td 10,943 ft.

Polk County—Livingston Discovery: Shell's Dick & Failing 6, 467 fr ne&sel 160.7-ac lse, A. Viesca 7-lge Gr A-77, 990 nely fr No 1 well, elev

HELP WANTED

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■ **Wanted by a consulting geophysical organization, Petroleum Engineers with Hayward Mudlogging experience or its equivalent. Immediate openings in Venezuela. Excellent opportunity for advancement to managerial positions throughout the world. Address: Box 36, c/o The Oil Weekly, Houston, Texas.**

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■ Engineers Wanted: Graduate Ch.E., M.E. or E.E., 20 to 29 years of age, having refinery or laboratory experience. Essential industry with postwar continuance. State education, experience, salary expected, and date of availability. P. O. Box 2546, Houston 1, Texas.

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Trading Post Section, The Oil Weekly
P. O. Box 2608 **Houston 1, Texas**

231 ft df, failed in Sparta zone, Wilcox 6566 ft, perf 120 shots 6562-70 ft, flow 600 bbls 36-gr oil, 0.2% wtr, ¼-in, gor 404/1, td 7036 ft, pb 6675 ft.

EAST TEXAS WILDCATS

Leon County—Failure: Al G. Hill et al's Hill-J. M. Kiser 1, 1000 ft fr m/s/sl 467 ft fr m/s/wl of 267.68-ac tr and I&GN Ry. sur A-987, elev 521 ft, Pecan 4243 ft, Austin 5309-5610 ft, Woodbine series 6004 ft, Woodbine sd 6113 ft, Georgetown 6406 ft, abnd 6424 ft.

Titus County—Failure: Humble's Searcy 1, 660 ft ewl 566 ft nsl of 57¾-ac tr and Wm. H. Gilbert sur, 1½ mi s of Mount Pleasant, elev 398 ft, Pecan chalk 2273-2730 ft, Austin 3525-3560 ft, Sub-Clarksville 3580 ft, Woodbine 4058 ft, Georgetown 4490 ft, Ft. Worth 4930 ft, Goodland 5418-90 ft, Paluxy 5490 ft, Glen Rose 5920 ft, Massive anhydrite 5930-7110 ft, Rodessa porosity 7370 ft, Pittsburg sd 7695 ft, Travis Peak 7740 ft, Cotton Valley 9150 ft, Buckner 11,130 ft, Smackover li 11,800 ft, abnd 12,010 ft.

EAST TEXAS OUTPOST

Hopkins County—Pickton Fld Failure: Sun's Turner 1, 467 ft out swc of 152-ac portion of 222¼-ac lse, Antonio Lazarine sur, 8000 ft ne of prod, elev 512 ft, Pecan 2532-2740 ft, Austin 3985-4100 ft, Woodbine 4580 ft, Georgetown 5268 ft, Ft. Worth 5798-5963 ft, Paluxy 6330 ft, Glen Rose 6730 ft, 1st anhydrite 7610 ft, Massive anhy 7825 ft, abnd 8189 ft.

NORTH TEXAS WILDCATS

Archer County—Failures: Fortex Oil Corp.'s W. B. Ray 1, 2500 ft nsl 2890 ft wel W. C. Winters sur A-663, abnd 1514 ft.

D. H. Bolin et al's Abercrombie 1-K, 900 ft snl 150 ft ewl blk 160, J. W. Harris subdvn, abnd 1290 ft.

Frank Wood and A. R. Dillard's O'Keefe 2, 600 ft nsl 450 ft wel sect 32, blk 5, Clark-Plumb sur, abnd 1180 ft.

Clay County — Failure: Perry Browning et al's Willis 1, 450 ft out swc blk 76, Parker CSL sur, abnd 2002 ft.

Cooke County—Failure: Benson Bros. et al's H. Dangelmayer 1, 931 ft ewl 1035 ft snl lot 6, Francis Hughes sur A-439, Ellenburger detrital li 3180-3200 ft, Ellenburger dolomite 3360 ft, Cambrian 3616-3784 ft, Schist 3872 ft, abnd 3886 ft.

WYOMING WILDCAT

Niobrara County—Failure: Nat. Assoc. Pet. Co.'s Whitmore 1, c se se 34-35n-63w, West Hat Crk, abnd in Belle sd 2696 ft.

WYOMING OUTPOSTS

Park County—Little Buffalo Basin Extension: Trigood Oil Co.'s State-Grebo Royalty 1, ne ne se 2-47n-100w, Embar 4815 ft, Tensleep 4997 ft, elev 5404 ft, perf 4806-57 ft, 1000 gals acid, swab 15 bbls 20-gr, td 5085 ft, pb 4940 ft.

Park County — Little Sunshine Extension: Continental's Wolff 2, ne se ne 9-46n-101w, swab 10 bbls heavy non-comm oil, capped for possible abandonment, td 2505 ft in Embar.

Park County—S. Sunshine Failure: Continental's Wolff 3, ne ne nw 9-46n-101w, Tensleep 2910 ft, Embar li 2555 ft, abnd 3064 ft.

United States Wildcat Starts

ARKANSAS

Cleveland County: E. E. Moore's Victor Moore Est. 1, sw ne 28-9s-10w, lcn 4500-ft test.

Columbia County: Midstates' Westmoreland-George 1, nec sw 34-19n-20w, lcn.

CALIFORNIA

Fresno County: Standard's Giffin 74-18, se ne 18-16-16, lcn.

Kern County: General Pet. Corp.'s Kernway 64-1, sw ne 1-29-26, lcn.

Rothschild Oil Co.'s Trust 81, ne ne 13-29-28, lcn.

Richfield Oil Corp.'s Bankline 1, nw nw 35-28-27, lcn.

Independent Explor. Co.'s Heisen 1, nw se 36-27-28, lcn.

General Pet. Corp.'s Bishop 2, nw se 14-28-28, lcn.

Faria and Thilgen's Bocqueras 4, ne se 17-24-18, lcn.

Los Angeles County: Texas Co.'s Kern 1, ne nw 18-4-17, lcn.

Sonoma County: L. A. Gregary's 1, 29-5n-6w, lcn.

ILLINOIS

Clay County: J. E. Heavener's Broodhead 1, se sw se 14-5n-5w, dr.

Edwards County: Aetna's C. Greathouse 1, sw ne nw 23-1n-10e, dr.

Marion County: A. R. Floreen's March 1, sw se ne 35-1n-2e, lcn.

Wayne County: Pure's Smith 1-A, se se se 17-1s-7e, lcn.

INDIANA

Posey County: Bristol Hackbush's Reis 1, nw ne se 24-5s-12w, lcn.

Vanderburg County: J. W. Cannon's Heirs 8, ne se 8-2n-5w, dr.

KANSAS

Barber County: Alladin Oil's Hastings 1, se ne 31-30s-14w, lcn.

Barton County: Kiowa Drlg. Co.'s Asher 1, sec ne 20-20s-14w, woc.

Greenwood County: Glenn Smith's Red Ranch 3, nwc se 4-23s-8e, mim.

Pawnee County: Continental's Norris 1, se sw ne 9-22s-20w, lcn.

Pratt County: Amerada's Drews 1, sec nw 3-27s-12w, lcn.

Saline County: Frank Weimer's Juleps 1, nec 30-15s-1w, mim.

Stafford County: Republic Nat. Gas Co.'s Asher 1, nw nw ne 1-24s-13w, woc.

Sumner County: El Dorado Rfg.'s Patterson 1, nec ne 23-33s-2e, mirt.

KENTUCKY

Henderson County: Wood's McGeeagee 1, 23-Q-22, dr.

Ohio County: Ashland O&R's Barnard 1, 13-L-32, lcn.

NORTH LOUISIANA

DeSoto Parish: G. H. Vaughn's McGrew 1, c sw sw 34-16n-14w, lcn Pettit test.

MICHIGAN

Ottawa County: C. A. Perry's Verbeck 1, sw sw se 24-6n-15w, dr.

Tuscola County: Shell's Hutchinson 1, ne ne nw 21-14n-10e, dr.

Van Buren County: Gordon Oil Co.'s Luth 1, nw nw sw 4-4s-14w, dr.

Washtenaw County: W. H. Colvin et al's Meinzinger 1, se ne nw 12-2s-7e, dk.

MISSISSIPPI

Jefferson County: Gulf's Ella M. Cato 2, c nw nw ne 30-8n-4e, lcn.

Marion County: Gulf's R. H. Bradshaw 4, sw se se 21-3n-17w, lcn Tuscaloosa test.

NEW MEXICO

Lea County: Mac T. Anderson and C. B. Buck's State 1, ne nw nw 21-21s-33e, lcn 3500-ft San Andres test.

OKLAHOMA

Garfield County: W. E. Anderson's Braithwaite 1, nw nw ne 8-20n-3w, bldg rig.

Garvin County: Continental et al's Kenniebrew 1, ne ne nw 27-3n-1e, lcn.

Okfuskee County: Mid-Continent Oil's Gee 1, ne ne ne 1-12n-8e, rur.

Stephens County: Brigance & Shine's Poe 2, se se ne 7-3s-4w, lcn.

WEST TEXAS

Andrews County: Stanolind-Continental et al's University 1-B, c se se sec 5, blk 9, 1½ mi se Fuhrman field, lcn 6000-ft Holt lime test.

Gaines County—Russell Field: Sinclair Prairie's Northrup-Lindsey 1, c se ne CCSD&RGNG Co. 461, blk G, 1½ mi se Russell field, lcn.

Howard County: Richfield Oil Corp.'s F. O. Shortes 1, c se nw T&P Ry. 1, blk 34, T-2-N, lcn 7000-ft Clear Fork test.

Irion County: Skelly's Sugg Est. 1, c se se H&TC Ry. 45, blk 1, lcn 8500-ft Ellenburger test.

Pecos County: G. F. Aldrich et al's Crockett-Sun 1, 330 ft fr sw&sel of sw⅛ H&TC Ry. 26, blk 2, lcn 2500-ft cable test.

Humble's El Paso State Nat'l Bank 3, c sw se T&St.L. Ry. Co. 23, blk 14, lcn 5000-ft Ellenburger test.

Texas Co.'s Ernest Riggs 1, c se ne T&St.L Ry. Co. 8, blk 146, lcn.

Milton Unger et al's J. L. McMurtry-Magnolia 1, 2310 ft fr swl 990 ft fr sel H&GN Ry. 66, blk 10, 1⅛ mi ne shallow prod, lcn 2000-ft cable test.

Scurry County: Richfield Oil Corp.'s C. D. Cribbs 1, c se se H&TC Ry. 577, blk 97, lcn 5000-ft Clear Fork test.

Yoakum County: Honolulu Oil Corp.'s R. M. Hudson 2-B-75, 990 ft snl 1320 ft wel sec 75, blk D, J. H. Gibson sur, 2 mi sw production, lcn 5500-ft test.

WEST CENTRAL TEXAS

Fisher County: Thos. W. Doswell's J. B. Humphries 1, c se nw H&TB Ry. 4, blk 1, 1¼ mi sw of McCaulley fld, lcn 3350-ft rotary test.

Jones County: Con-Tex Petroleum Corp.'s R. P. King 1, 330 ft out sec sect 42, Orphan Asylum Lands sur, lcn 2400-ft cable test.

Primo Oil Co.'s Mrs. M. A. Martin 1, 300 ft snl 800 ft ewl of sect 13, Jos. Weihl sur, lcn 1950-ft cable test.

Texas Co.'s C. E. Dickinson 1, 1650 ft out swc of lse, H. B. Williams sur No. 273, lcn.

Shackelford County: Eltex, Ltd.'s Merrick Davis 1-B, nw nw se T&P Ry. 16, blk 12, cable test.

SOUTH CENTRAL TEXAS

Wilson County: L. P. Ormsby's Williamson Heirs 2, 330 fr sl 660 fr wl 240.66-ac lse, M. Votez sur, 330 e of well No. 1, lcn 5200-ft test.

Quintana Pet. Co.'s Annie L. Moore 1, 1200 fr nwl 1100 fr swl 125-ac lse, David O. Warren Lge, lcn 10,000-ft test.

SOUTHWEST TEXAS

McMullen County: Dee Davenport's Annie Graves Dolph et al 1, 2970 fr nl 330 fr wl sect 52, C. C. Shumway subdvn, M. A. Grist sur, 4042-ac lse, lcn 6500-ft test.

W. C. McBride's Mrs. Loma Pugh et al 2, 330 fr nw&nel blk 2, W. C. McBride subdvn, E. L. Garrett sur 93, lcn 2000-ft test.

LOWER TEXAS COAST

Bee County: Navarro Oil Co.'s Forrest A. Dahl 1, 1552.7 fr nw&sel 466 fr swl 229-ac lse, Geo. Fagan sur, 7000-ft test, dk.

Jim Wells County: Dee Davenport's L. T. Burns 1, 330 fr sl 660 fr wl J. Almond sur 8, 1441-ac lse, lcn 5000-ft test.

San Patricio County: Jay Simmons' H. R. Brown Est. 1, 430 fr nel 878 fr nwl blk 15 and 80-ac lse, J. J. Summers subdvn, lcn 6000-ft test.

TEXAS GULF COAST

Wharton County: Sam G. Harrison's T. N. Mauritz et al 1, 467 fr n&wl sect 11, M&C sur, A-281, 440-ac lse, 12 mi se Hillje, elev 75 ft, lcn 7500-ft test.

EAST TEXAS

McLennan County: Albert Plummer et al's B. G. McKie 1, 1940 ft wel 1400 ft snl of 516-ac tr and Farnham Frye sur No. 352, lcn 5000-ft test.

Robertson County: W. V. Shaw and C. A. Riddle's J. C. Stephens 1, 660 ft snl 540 ft wel of 304.2-ac tr, or 6150 ft nsl 540 ft wel Jas. W. Hill sur, 1700-ft test, sd repairs 656 ft.

NORTH TEXAS

Archer County: D. H. Bolin et al's J. A. Young 1-A, 1950 ft wel 3375 ft snl TE&L Co. sec 2486, lcn 1550-ft rotary test.

D. H. Bolin et al's M. A. Garvey 1-A, 900 ft snl 600 ft ewl blk 94, Jefferson CSL sur, lcn 1250-ft test.

L. T. Burns et al's Borson 1-E, 467 ft ewl 330 ft snl TE&L Co. sect 1808, 3¾ mi nw Garvey-Farmer area, lcn 6000-ft Ellenburger test.

Republic Nat. Gas Co.'s W. L. King 2, 2850 ft wel 150 ft nsl of Wm. Henry sur A-163, lcn 1450-ft rotary test.

Clay County: Fain-McGaha et al's W. B. Frey 1, 660 ft out nwc blk 103, Parker CSL sur, 3 mi ne of 5935-50-ft discovery, lcn 6500-ft Ellenburger test.

Cooke County: G. E. Kadane & Sons' W. L. Parker (Stark) 1, 830 ewl 330 ft nsl P. G. Yarbrough sur A-1175, 1 mi e of Hood, lcn 1450-ft rotary test.

Nu-Enamel Oil Operating Co.'s J. T. Biffle 1, 1470 ft wel 1290 ft nsl of A. J. Miller sur A-635, lcn 2000-ft rotary test.

Young County: Fleming Oil Co. et al-Hanlon & Buchanan's Graham-Tankersley 1, 330 ft out nec sw¼ TE&L Co. sect 741, lcn 6000-ft rotary Ellenburger test.

WESTERN CANADA

Alberta Foothills Belt—Stimson Creek: Consumers' Co-operative Refineries' Co-op 1, lsd 11 22-17-2w5th, mir.

Shunda Creek: South Brazeau Petroleum's No. 1, se¼ 35-39-14w5th, lcn.

South Alberta Plains—Endon: McColl-Frontenac Oil Co.-British Dominion Oil & Devel. Corp.'s Endon 9-29-6-7, c lsd 9 29-6-7w4th, ru.

Conrad: California-Standard Co.'s Conrad-Province 75-32B, lsd 12-32-5-15w4th, ru.

Asphalt Area Map

A geologic and topographic map of the Sulphur asphalt area of Murray County, Oklahoma, covering approximately a square mile on a scale of 300 feet to the inch, has been published by the U. S. Geological Survey. The map was prepared by Joseph M. Gorman and George M. Flint Jr., of the U. S. G. A., and Dr. Charles E. Decker and William E. Ham, of the Oklahoma Geological Survey.

A brief text explains how the rocks in the asphalt area which originally were arched into a broad syncline, are broken by faults so that the earlier structure is obscured. The asphalt deposits are localized in sandstone members of the Oil Creek formation and other formations in the Simpson group near faults, which facilitates the upward movement of the bituminous material. The sheet is entitled: "Geologic Map of the Sulphur Asphalt Area," and copies may be purchased from the Director, U. S. Geological Survey, Washington 25, D. C.

Squeaks from the Bull Wheel

The Badder the Gooder—

"Bring in one of the ladies of the harem."

"Very good, Sultan."

"No, not necessarily."

Might Be Easy—

"Would you call for help if I tried to kiss you?"

"Would you need help?"

Yes, Indeedy—

"I think all men are trying at times."

"All the time, I'd say."

Good But Not Glad—

"Did you have a good time at the party, Phyllis?"

"Nope—I had too much will power."

Facts of Life—

If a lady says "No" she means "Perhaps."

If a lady says "Perhaps" she means "Yes."

If a lady says "Yes" she's no lady.

When Two Agree—

"I love you terribly."

"You certainly do!"

Hot Check—

The tightwad, out of town on his wife's birthday, sent her a check for a million kisses.

By return mail he received this note: "Thanks for the lovely birthday check. The milkman cashed it this morning."

Guilt Established—

"It was all my fault," admitted the lady motorist after the accident. "I was driving on the wrong side of the street."

"No, madam," said her gallant victim. "The fault was mine. I saw you coming blocks away and had ample time to dodge down a side street."

Gangway!

Sensing the approach of death, the old millionaire invited his six married sons to Sunday dinner. As they sat down at the table he told them he had not made arrangements about his will because of disappointment that he was not a grandfather. So as a bonus, he announced he would give $10,000 to the first grandchild.

After asking the blessing, he looked up and—sure enough—he was the only one left at the table.

Yep, It's Crooked—

The dealer in the poker game jumped to his feet and cried angrily: "I won't play another hand with you cheats! Not a single one of you played the cards I dealt you!"

He Sobered Up

Old Maid: "An intoxicated man got into my house by mistake last night and you should have seen his embarrassment."

Spinster: "I'll bet he was put out, all right."

Old Maid: "I'll take that bet!"

This Curious World

You never can tell how a girl will turn out until her folks turn in.

Before marriage a man yearns for a woman; after the ceremony the "y" is silent.

A corset is something that keeps waves out of the WACs.

Work faithfully eight hours a day and don't worry. Then, in time, you will become the boss and work twelve hours a day and have all the worry.

No matter what you do, somebody always knew you would.

One of the best ways to judge a man is by what he laughs at.

Thin ice isn't dangerous—if you skate fast enough.

Nobody likes for a competitor to beat him to the punch—especially if its made out of gin.

Any man who horses around long enough is bound to get hitched.

A woman who flirts with the butcher is playing for big steaks.

Some men marry in haste and repeat at leisure.

A woman and a car are alike in that a good paint job conceals the years, but the lines reveal the age.

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See Lamtex Composite Catalog, pages 1570-1571.

Notes for the Equipment Buyer and User

Portable Drilling Rig

FAILING SUPPLY COMPANY

A small, compact portable drilling rig, designed to drill core holes from two to six inches in diameter, is drilling holes 30 and 36 inches in diameter. These large holes are being drilled by the Failing Model 1500 drill, manufactured by the George E. Failing Supply Company of Enid, Oklahoma, and Houston. This brand new system of exploring is being used by U. S. Army Engineers of the Galveston district preparatory to excavating for dams and bridges.

Not only are large diameter holes being drilled by this light rig, but cores 28 and 34 inches in diameter and ranging from three to four feet in length, with a weight of from 1500 to 2500 pounds for each core, are being removed from the holes. The deepest of these large diameter holes reached a depth of 138 feet.

To convert the small drilling unit into a machine capable of cutting these giant-sized cores, a barrel-like affair with slits in the end is attached in place of the usual drill stem and the rotary motion is started. Steel shot are fed into the hole at intervals and these furnish the cutting medium. When the core is full, the barrel is pulled to the surface and a driller is sent down into the hole. He wedges a metal ring around the freshly cut core and with another wedge breaks it off from the rock formation below. Then it is but a matter of a few seconds until the core is hoisted to the surface and rolled out of the way. One core usually is cut on each tower.

Heater Booklet

Tivit Products, 909 E. 60th Street, Los Angeles, has published a bulletin describing circulating and flow line heaters.

A large diameter core as it is pulled from the hole by a lightweight, portable Failing Model 1500 Drill. The special lifting apparatus can be seen attached to the core at the top. The core barrel is shown at the right.

Production Resumed

Patterson-Ballagh, 1900 East 65th Street, Los Angeles, California, has resumed full production of its tubing protectors after two years layoff because of war work.

Office Moved

The Permutit Company, water conditioning specialist, announces removal of its Los Angeles office to larger quarters at 405 South Hill Street, Los Angeles 13. U. A. Hammett will continue as district manager of this office which covers the company's activities in the Southwest.

Water Distilling Unit

AMERICAN CYANAMID AND CHEMICAL

American Cyanamid and Chemical Corporation, 30 Rockefeller Plaza, New York 20, New York, announces a unit by which it is said that ordinary water can be transformed into the chemical equivalent of distilled water by simple filtration.

The principle of the Filt-R-Stil, as the device is called, is one of filtration by skillful utilization of melamine-derived and other resins. Water is passed through beds of these ion exchange resins which transform the dissolved salts in the water to the corresponding acids and in turn absorb the acids. The process may be visualized, it is said, by picturing water as containing flowing metals which are attracted by a magnet except that the magnet, in this case, is chemical rather than electrical.

Vice President Named by Kaydon Engineering

Kaydon Engineering Corporation, Muskegon, Michigan, announces the appointment of Herman H. Brooksieker as vice president in charge of manufacturing. Brooksieker for the last seven years was vice president and superintendent of Pesco Products Division of Borg-Warner Corporation, Cleveland, Ohio.

New Engineering Firm Opens Office in Tulsa

Announcement has been made of the formation of The Hayes-Condit Company to be located at 624 South Cheyenne, Tulsa, and headed by M. A. Hayes and D. J. Condit. The firm will serve as manufacturer's representatives in the Mid-Continent area and will provide engineering recommendations, sales and servicing for a number of well known equipment lines in the production, refining and process branches of the petroleum industry.

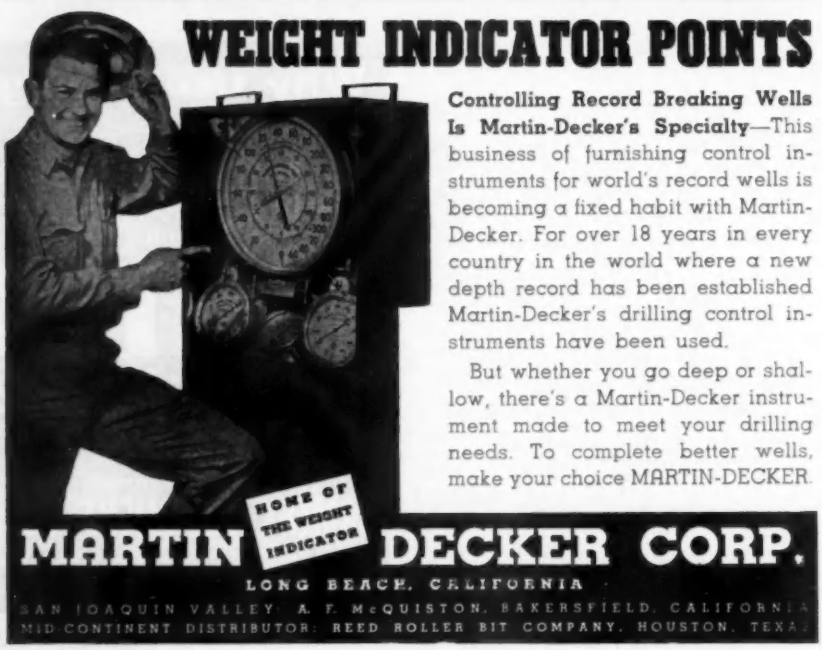
Hayes has been identified in the southwest territory for over 20 years in construction and engineering work for refinery installations. Condit, a chemical engineer from the University of Missouri, has had wide experience in the Mid-Continent in instrumentation, control and processing work.

Kobe Stock Transferred

Stockholders of Kobe, Incorporated, Huntington Park, California, have approved the transfer of the assets and business of the company to Dresser Industries, Incorporated, Cleveland, for 34,594 total shares of Dresser stock. Dresser directors had previously agreed to this transaction. Kobe is a manufacturer of hydraulic oilwell pumping systems.

Hewitt Firm Expands

Hewitt Rubber Corporation, Buffalo, New York, states that its recently announced expansion program will permit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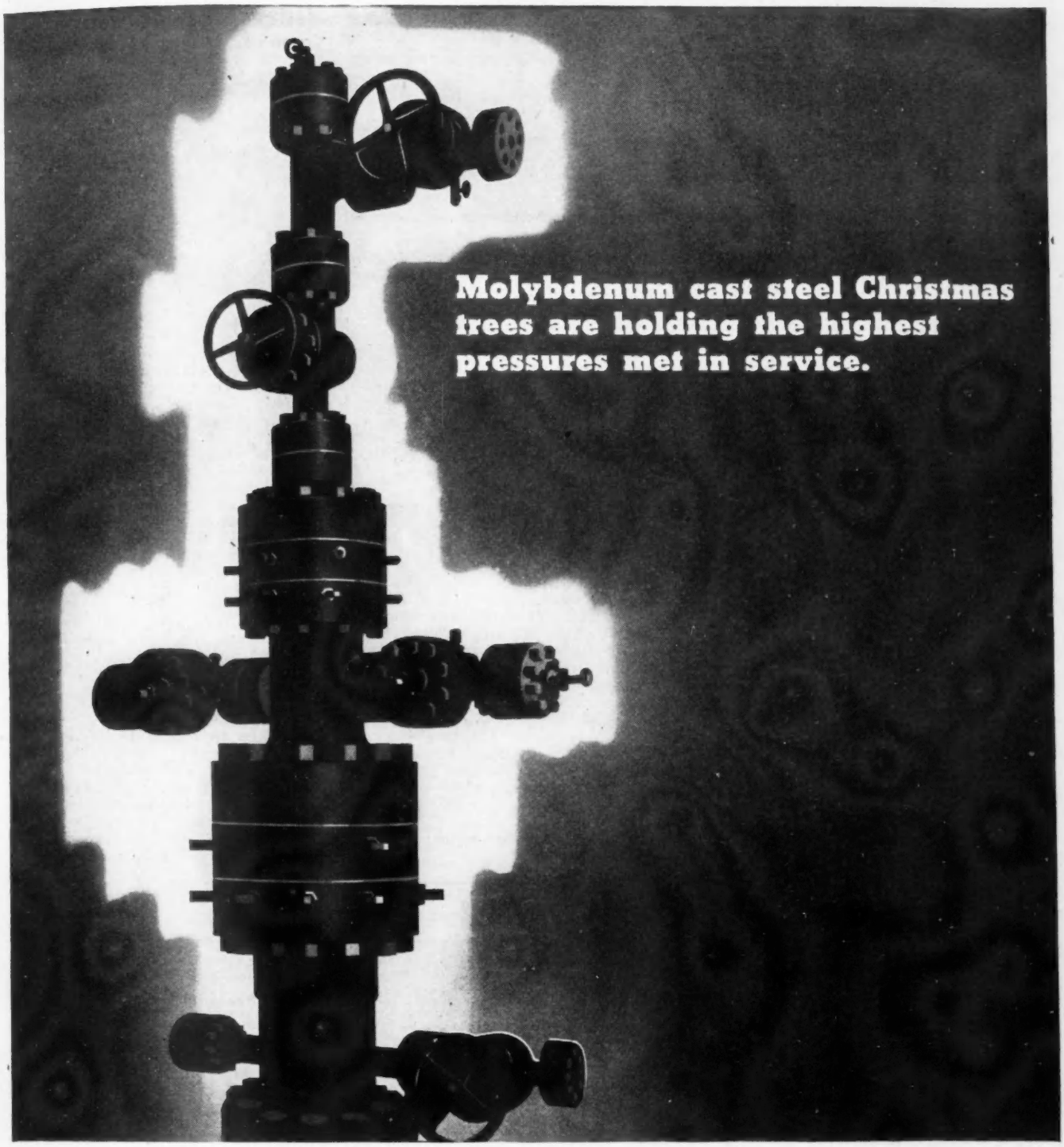

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See 1944 Composite Catalog Pages 2193 to 2212

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ORBIT VALVE COMPANY

TULSA, OKLAHOMA

increased output of conveyor belts, transmission belts and many types of industrial hose. The company will enter the field of latex foam and molded rubber articles for use in industry.

Personnel Changes Made By Lane-Wells Company

Lane-Wells Company, Los Angeles, California, announces a number of changes in personnel as follows: M. E. Montrose has resigned as director, vice president and manager of service and sales.

J. D. Hughes will head the sales department.

Miss B. G. Peters has resigned from the board of directors but will continue as secretary-treasurer.

The following two new members have been elected to the board of directors: Melvin H. Hass, administrative and executive assistant to the president, Adel Precision Products Corporation; and S. M. Wagner, division manager, Los Angeles Division, Ethyl Corporation.

Hydro-Treator Described

The Door Company, Engineers, 570 Lexington Avenue, New York 22, New York, announces Bulletin 9041 describing the Dorrco Hydro-Treator. The bulletin discusses various installations of the treator which is a self-contained water treatment unit combining the established steps of water treatment, flocculation, thickening and clarification. The treators are in use for the following purposes: coagulation for removal of turbidity and color; lime and lime soda softening; iron removal; algae removal; silica removal; magnesia recovery from sea water; brine purification; oil well brine treatment; and oil refinery waste water treatment.

Slush Pump Repair Parts Company Is Organized

Hugh Kirkwood

H. F. Schlittler

Falcon Products, Incorporated, is the name of the slush pump repair parts company recently organized in Huntington Park, California, according to Jack Pike, president.

Products of the company are being marketed under the name "Falcon" and are distributed in California and other domestic oil producing areas exclusively through supply stores.

General manager of Falcon Products, Inc., is H. F. Schlittler, who is also vice president. Schlittler was formerly with Abegg & Reinhold where he served for more than 14 years. The secretary-treasurer of the company, Hugh Kirkwood, who also holds the post of production manager, was with Republic Steel Company for 20 years before joining Falcon.

☆

E. W. SCUDDER, assistant geologist in the Tulsa division for Gulf Oil Corporation, has resigned effective March 1, to head a land and geological office in Denver for J. M. Huber Corporation, which is expanding its activities into the Rocky Mountain area. Scudder has been connected with Gulf 23 years and represented that company in Denver 13 years.

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